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World War 4K

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ON TEST

BenQ projector
Sony 5.1 soundbar
Panasonic 4K TV
Arcam AV receiver
LG 55in OLED
Amazon Music



KING OF TV!
Game of Thrones
hits Blu-ray with
Dolby Atmos, p99

FILM & TV

■ CRIMSON PEAK
■ LEGEND ■ LAST
WITCH HUNTER
■ HITMAN: AGENT 47
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TRANSYLVANIA 2

KEF's new Reference
Atmos array with super sonics!

INSIDE BUYERS' GUIDE → BASEMENT MOVIE ROOM → NETFLIX → SKY Q
→ BEST OF 007 → VIRTUAL REALITY → DTS:X BD ON TEST → READER'S CINEMA

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CES show report, p18

WELCOME

What's in a name? I ask because the AV industry has come up with yet another moniker to plaster on packaging. Ultra HD Premium will be used to denote hardware that meets criteria surrounding resolution, dynamic range, colour and brightness. These badges certainly can help – the Full HD logo being a fine example – but there are a few flies in the ointment. Firstly, where does it leave Ultra HD sets that don't meet the target? Buyers may worry they are 'obsolete', but they aren't. **You won't need an Ultra HD Premium-certified TV to enjoy BT's UHD channel or Netflix 4K**, for instance. Secondly, Sony has decided, for the moment anyway, to ignore the branding – despite being a member of the 'alliance' that came up with it in the first place.

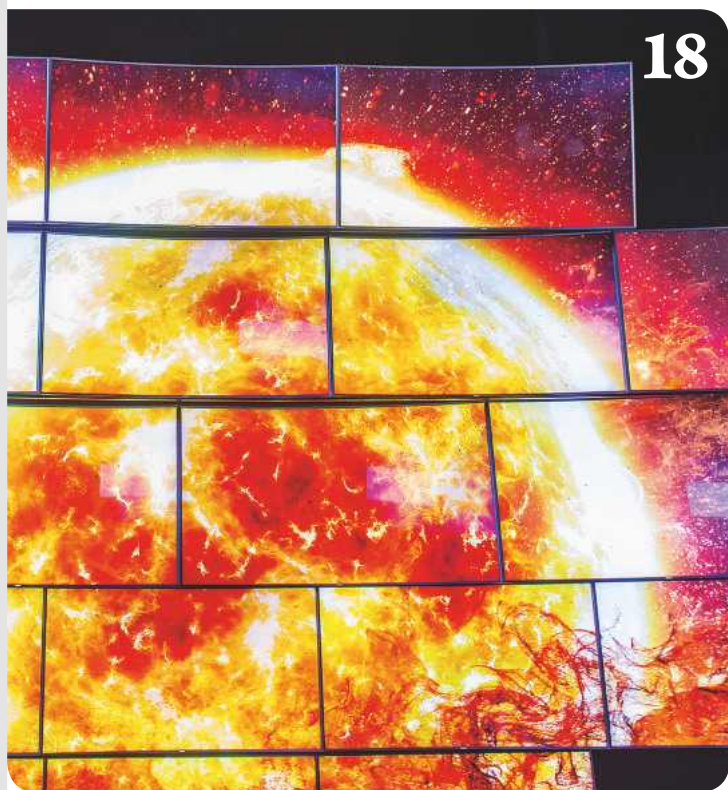


UHD Premium will be a big talking point as we move through the year and sets will wear the label proudly. But buyers need to be savvy about what it really means. See p18 for more.

Mark Craven
Editor



MENU



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package worth
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BULLETIN

→ **NEWS HIGHLIGHTS** PHILIPS Fidelio soundbar has Dolby Atmos up its sleeve
 SKY Satcaster reveals 4K and pricing details of its Sky Q system **MQA** Is the hi-res audio format ready for take off? **NETFLIX** Streaming platform aims for world domination **NEWS X10** The hottest news stories in bite-sized chunks **BRIDGE OF SPIES** Spielberg has Cold War chills **AND MUCH MORE!**

'XX' marks the spot

Wilson Audio Alexx → www.absolutesounds.com

New to Wilson Audio's range of ultra high-end speakers is the Alexx, which slots into place between the Alexia and Alexandria XLF flagship. The distinctive cabinets hide five drivers, including 12.5in and 10.5in woofers that can either be front- or rear-ported depending on the user's room requirements. Each Alexx speaker is hand-built in the US company's Utah HQ, with bespoke high-quality paint finishes available. Building a premium theatre? We expect these to sell for around £90,000 a pair.

HCC ONLINE...

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Atmos in a box

Philips Fidelio Soundbar with Dolby Atmos → www.philips.co.uk

The newest addition to Philips' innovative Fidelio soundbar range will offer Dolby Atmos decoding and upfiring speakers when it arrives this Summer. Aiming for immersive wraparound sonics (5.1.2) from its single, slender enclosure and separate wireless subwoofer, the 'bar features 18 drivers (six tweeters and 12 mid-range units) and a 180W power plant. Connections include Bluetooth, dual HDMI inputs and an HDMI output, although the latter only hits the v1.4a spec. Pricing has yet to be announced.



Upfiring Atmos drivers are mounted at each end of the soundbar

Yamaha upgrades kit



Yamaha has revealed plans to add support for HDR (HDMI 2.0a) and DTS:X content

to its lineup of Aventure AV receivers via a firmware upgrade that is due to roll out this Spring (precise dates TBC). Models set to benefit from the firmware are the RX-A1050, RX-A2050 (pictured), RX-A3050 and CX-A5100. Yamaha also plans to add HDR support to several of its mid- to high-end AVR's (including the RX-V679, RX-V779 and RX-A850). Finally, the brand's YSP-5600 Atmos soundbar will also get a DTS:X firmware upgrade. uk.yamaha.com

Naim shrinks Mu-so



Naim used the recent CES to debut its Qb wireless sound system. This mini Mu-so features

AirPlay, Bluetooth aptX and is DLNA compliant, and can be integrated with other members of Naim's multiroom ecosystem. Within its cubed body (Oh, now we get the name...) sit a quartet of drivers, plus a woofer and dual passive bass radiators. Additional features include USB, optical digital audio and 3.5mm inputs, internet radio access, app control and even an alarm clock. Expect it to sell for around £600, from March. www.naimaudio.com

Back to audio basics



Having already found success with its wireless speakers, headphones and ukuleles, affordable electronics brand Groov-e

has launched a new range of retro portable audio products. So, if you've got boxes of music tapes in the loft, why not pick up its Personal Cassette Player and Recorder, which retails for just £18 and includes one-touch recording and a built-in mic. Or if you'd rather go digital there's the Personal CD Player, which will set you back £25, or £35 for a model with FM radio and a 99-track MP3 player. Groovy. www.groov-e.co.uk

Netflix has world in its sights

Platform opens 130 new territories, boasts of 'revolutionary shift' in TV

VOD trend-setter Netflix has expanded its service to more than 130 new countries around the world. The announcement came during a CES keynote by chief executive Reed Hastings, who also claimed the streaming corp has redefined what is possible when it comes to watching TV.

'Today you are witnessing the birth of a new global internet TV network,' gushed Hastings. 'Consumers around the world – from Singapore to St. Petersburg – will be able to enjoy TV shows and movies simultaneously.'

Some areas are off-limits, however.

Government restrictions on the overseas activities of American companies means Netflix remains absent from Crimea, North Korea and Syria, while access to China is yet to be arranged.

In the 10-minute speech, the company founder described Netflix as the latest step in a continuing technological evolution dating back through broadcast TV, cable platforms and personal recorders. 'The VCR and DVR were early efforts to give people what they wanted – on-demand television. With the internet we can finally give people what they have always wanted. We can now put consumers across the world in the driver's seat.'

'Internet TV allows us to redefine what is possible. You don't have to sit through commercials or be at the



Reed Hastings: 'You don't have to sit through commercials or be at the mercy of an 8pm tune-in. You just click and watch'

mercy of an 8pm tune-in. You just click and watch. A simple revolutionary shift from corporate to consumer control.'

In-house innovation

As well as gaining markets, 2016 will see Netflix push its original programming as it moves further away from bought-in content. Over 30 new and returning original series are scheduled for the year, including the fourth season of 4K front-runner

House of Cards, in addition to 24 original films and documentaries, stand-up comedy specials and children's TV series. And Hastings also said Netflix boffins continue to work on the adaptive streaming tech responsible for streaming the 125 million hours of content that its subscribers are getting through each day: 'Our talented engineers are constantly testing to compress more data through more advanced encoding. The goal is to

deliver data so fast and well on any device in any broadband condition.'

Shortly after the show, TV brand Philips revealed it will be adding Netflix to its Smart TV range – going back to 2013 models – via a firmware patch.



Season Four of *House of Cards* will arrive on Netflix March 4

PLAYLIST...

Team HCC spins up its disc picks of the month

Mission: Impossible – Rogue Nation (All-region BD)

Awesome action, astonishing stunts and amazing Atmos audio. What's not to love about this Blu-ray?



Pacific Rim 3D (All-region BD)



The arrival of Guillermo del Toro's *Crimson Peak* on BD was just the excuse we needed to give his 2013 blockbuster yet another spin

Cannibal Women in the Avocado Jungle of Death (Region B BD)



Still pretty rough around the edges, but it's hard to imagine that this tongue-in-cheek romp has ever looked as good as it does here

Everest 3D (All-region BD)



We're still in awe of this disc's immersive Atmos mix. And the 3D looks just as good as we'd hoped

Kiss of the Spider Woman (Region B BD)

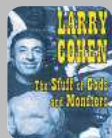


A handsome hi-def version of this fascinating character study, loaded with worthwhile bonus features

EXTRAS...

Small items that could make a big impression

Larry Cohen: The Stuff of Gods and Monsters



Based on a series of interviews conducted between 2011 and 2014, this hefty tome finds B-movie legend Larry Cohen discussing his life and career in remarkable depth. From TV's *The Invaders*, to cult classics like *The Stuff* and hits like *Phone Booth*, Michael Doyle's superb £30 book leaves no stone unturned.

LEGO Batman: Classic TV Series – Batcave



Holy building blocks, Bat-fans! March sees the release of a new LEGO set based on the classic 1960s *Batman* live-action TV series. Priced £230 and comprised of over 2,500 pieces, it includes a three-part recreation of the Batcave (with Batpoles), plus the Batmobile, Batcopter, Batcycle and nine minifigures.



Star Wars FAQ

You might think that there's nothing left to say about the original *Star Wars* trilogy. But Mark Clark's witty and engaging book (£15) does an impressive job of shining a light on some of the less explored areas – including the notorious 1978 *Holiday Special*.

MQA prepares for launch

Tidal tests revolutionary sound format, hardware manufacturers sign up

A year after its unveiling, advanced high-res audio codec MQA is gaining traction with content providers, according to the company's head of licensing, Andy Dowell.

'The entire 2L catalogue has now gone through the MQA encoding process, from its newest stuff through to some of the earliest recordings,' Dowell revealed to *HCC* at January's CES. Spotify rival Tidal has also successfully concluded an MQA trial, streaming encoded music to a range of integrated products at the tech show. 'We have been live-streaming 192kHz/24-bit at just 1.5Mbps,' says Dowell. 'This is an important first step. Previously we had only streamed MQA through apps. Now it's running on integrated products.'

Dowell points out it's a relatively cost-effective process for studios to convert content. 'The sky's the limited as to how much we can ultimately encode.'

The technology is also ramping up hardware support. Following the launch of Pioneer's XDP-100R portable player (reviewed last issue), other brands have signed up. Joining are dCS, Ixion Audio and AudioQuest, while HTC has announced a proof-of-concept MQA-compatible smartphone. 'HQM,



Bob Stuart: 'MQA tells you you're playing back what was signed off in the studio by the artist and the producer'

which is a music service in Japan, will support MQA under the Krypton brand,' adds Dowell. 'It's onwards and upwards.'

A key aspect of the MQA codec's commercial appeal is that it's universally compatible. You don't actually need an MQA hardware decoder to listen to MQA files or streams. 'It would be very hard to introduce a new format these days if it wasn't completely compatible,' explains Meridian Audio founder and MQA inventor Bob Stuart. 'One of the cutest things about MQA is that when we take and encode the audio into a smaller package, it's PCM when we start and it's PCM when we finish. This 'folded' piece of PCM will play back without an MQA decoder. That means I can give you a file and you can play it back anywhere. You can put it in iTunes, you can put it in your car, and it will sound better than CD. But if you've got a hardware decoder it unwraps to give the full sound as heard in the recording studio.'

As a consequence, he says, a music producer is able to listen to what a file will sound like without an MQA decoder and what it will sound like with an MQA decoder in the studio, and sign off both versions. 'This means they can hear what it will sound like on a CD, an iPad, a phone. They can preview all those possibilities.'

This studio-quality guarantee is a concept easier for consumers to understand than the numbers game associated with high-res audio, argues Stuart. 'MQA tells you you're playing back what was signed off in the studio. You're getting the same analogue signal – this is a dramatic difference.'



MQA – the latest sonic innovation from Meridian Audio

Loewe takes aim at second rooms

Connect 32 is a high-spec TV for your bedroom, kitchen or media den

Last year Loewe added an 85in model to its Reference UHD TV range – now it's looking to different buyers altogether with a new 32in Full HD set as part of its Connect line.

Don't think the luxury marque wants to go head-to-head with supermarket brands, though – the Connect 32 will retail for £1,000 and claims to be 'the best performing, most highly-specified 32in TV on the market.' To back up that boast, the set features an edge-LED array designed specifically for this model which, says Loewe, offers a 25 per cent brightness boost over 'standard' 32in rivals, plus wide viewing angle and improved colour saturation.

An onboard 80W speaker array promises premium sonics.

A step-up model, the £1,300 Connect 32DR+, features a 1TB tuner, bringing with it recording and content-sharing talents with other Loewe TVs on the network. Recordings can also be set remotely via Loewe's Smart Assist app.

Both models are available in a choice of black, silver, cappuccino or petrol-blue trims, with adjustable desktop stands.

'It's easy to forget that 32in TVs are extremely popular in the UK market,' says marketing manager Charlie Cann.



Floorstands for the Connect 32 are an optional extra

BNX-60

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Our calendar ensures that you don't miss out...

→ FEBRUARY

19: Bone Tomahawk

Fresh from *The Hateful Eight*, Kurt Russell (and his terrific facial hair) return in this Western-horror mash-up that hits UK cinemas today. www.theworksfilmgroupp.com

22: Spectre



Bond is back on Blu-ray and DVD! Hi-def extras are set to include six video blogs, a gallery and a featurette on the film's opening stunt –

speaking of which, head over to p26 for our guide to the best 007 stunts... www.fox.co.uk

26: The Bristol Show: Sound & Vision 2016

Team HCC will be making tracks for Bristol's Marriot City Centre Hotel as the UK's largest hi-fi and home cinema show opens its doors for a three-day event. www.bristolshow.co.uk

29: Audition

Takashi Miike's celebrated J-horror joins the Arrow Video Blu-ray range with a brand-new 2K restoration. Available as both a regular BD and a limited edition Steelbook. www.arrowfilms.co.uk

→ MARCH

04: London Has Fallen

This sequel to one of our favourite *Die Hard* imitators finds Gerard Butler protecting the US President when terrorists strike during a visit to London. Catch it at your local cinema. www.lionsgatefilms.co.uk

07: Doctor Who: The Complete Ninth Series



Peter Capaldi's second series in the role gets the deluxe treatment with this feature-packed boxset. As well as all 12 episodes, it includes the 2014 and 2015 Christmas Specials. Pick it up on Blu-ray or DVD. www.bbcworldwide.co.uk

11: The Witch

A 17th Century Puritan family face an unspeakable evil from nearby woods in this chilling horror film. Track it down at cinemas from today. www.universalpictures.co.uk

17: HCC #258

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Sky talks 4K, Atmos and VR

The Sky Q platform is just the start of a whole new universe of fun

Sky has admitted to HCC that its new Sky Q Mini second-room TV streamer is unable to play 4K content from a Sky Q Silver UHD set-top box, but the company isn't ruling out the possibility of a UHD Mini when it thinks the time is right.

'We don't think this is a problem at launch as the penetration of 4K TVs is so low,' comments Sky's Director of New Products Andrew Olson, 'but you can imagine over time there will be a version that will support 4K. But as of right now the Mini is exactly the same as our Sky Q standard PVR. It has the same chipset.' Consequently, any 4K recordings on the Silver won't be visible to users of the Mini, he says.

For those playing catch-up, Sky Q is the biggest technology launch from the broadcaster since Sky HD. It not only seamlessly mixes satellite channels with internet-delivered on-demand content, it's also 4K capable (channels TBA). The flagship Silver PVR has a 2TB drive, and the ability to record up to four channels simultaneously. It's joined by an HD-only stablemate with a 1TB drive. Both stream content to Mini tellyboxes which have no local storage.

Unsurprisingly, the satcaster has confirmed that this new premium service will come with a sizeable price tag. The base cost of Sky Q will be £42 per month, with the Sky Q Silver bundle (including one Sky Q Mini box) starting at £54. On top of this, there's also the small matter of a £99 setup cost.

Third party partners

For the first time, Sky has also partnered with other content providers, bundling their apps onto its new platform. Third party suppliers include Go Pro, GQ, Wired, Funny or Die, Red Bull and Vevo. There are also sidebar apps, including one for local weather.

But what of the big two streaming services? Will we ever see Netflix or Amazon on Sky Q? 'Well, we're talking to lots of different folks,' says Olson. 'We're



Andrew Olson: 'We don't think the lack of a UHD Mini at launch is a problem as the penetration of 4K TVs is so low'

open to working with different partners and we want to create a great experience. We've worked really hard to make these apps look and function like Sky Q. We've put a lot of energy into making sure they all work the same way.'

Olson says that Sky is also looking at adding Dolby Atmos support – but admits it isn't on the agenda anytime soon. 'We should be able to support it with the chipset we're using. There are different ways to do it – as a pass-through bitstream or demux the audio channels in the box, which is what we do today,' he says. Ultimately it's about demand, though. 'There's the question of how many people actually have Dolby Atmos hardware at the moment. With a brand-new product you have to focus on features that a lot of people will use. We have to compare Atmos to YouTube, and prioritise development.'

Playing around with VR

Still, Olson is willing to reveal that his Sky roadmap has some interesting detours. 'We're playing around with Virtual Reality,' he admits.

'We're about long-form content to a great degree, but we have a research group that looks at things like this. I haven't seen a Google Cardboard demo that doesn't overheat in ten minutes, and it'll be interesting to see if Oculus Rift achieves scale, but we'll experiment internally to see what might be compelling for our customers.'

'I think eventually we'll get there. The logical extrapolation is when VR gets to contact lenses. Just as the iPod was inevitable from that first Sony Walkman, when you look at Oculus Rift, VR contact lenses seem just as inevitable. It's just a question of miniaturization. Saline is a conductor, so you can put them overnight in a saline solution to clean them – and they would also charge.'

Sky Q is available to buy now, with installations starting in late February



This month's top 10 news stories in handy, bite-sized chunks...



1 Watching paint dry

Enterprising young filmmaker Charlie Lyne's protest movie *Paint Drying* has been granted a U certificate by the BBFC. Paid for using a crowdfunding campaign, *Paint Drying* is a single uninterrupted shot of a recently painted wall, the length of which was to be dictated by the amount of money raised to pay the BBFC's hefty submission fees (charged per minute of footage). Having raised just shy of £6,000, Lyne was able to submit a 10.5 hour cut, which examiners then had to sit through in its entirety before issuing the certificate.

2 Online beats TV among kids

The latest annual media monitoring report from research agency Childwise claims that, for the first time ever, young people (aged between five and 16) in the UK are now spending more time online than watching TV. Among those watching TV, Netflix is more popular than any conventional channel.

3 Samsung hits new milestone

Samsung's Smart TV platform has reached a new milestone following the news that it has now passed the 2.5m weekly unique visitors mark in the UK. This represents an increase of around 33 per cent in the space of just six months.

4 Spotify in the dock

Musician and 'vocal rights advocate' David Lowery has launched a class action lawsuit against Spotify. Filed in late December, the lawsuit alleges that the music streaming service knowingly, willingly and unlawfully reproduced and distributes copyrighted materials without the proper licenses and seeks at least \$150m in damages. Ouch.

5 Onkyo scores UHD goal

Onkyo has become the first AV receiver manufacturer in the world to have its products tested for compatibility with the HDCP 2.2 encryption used by the BT Sport Ultra HD channel. The results of BT's testing demonstrate that Onkyo AVRs equipped with HDCP 2.2 copy protection (first made available in 2014) are fully compatible with the service.

6 Virgin teams Vevo with TiVo

UK cable TV operator Virgin Media has announced that popular music video portal Vevo is joining its TiVo service. The Vevo app will be available to all TiVo customers regardless of their package, bringing access to a catalogue of over 250,000 videos. The news is just 'one part of what we hope will be an exciting year for entertainment from Virgin Media,' says the company.

7 Buyers circling Sharp

Taiwanese electronics company Foxconn has reportedly made a \$5.4bn bid for embattled TV maker Sharp. However, it appears that the Japanese government may be unwilling to let the company fall into foreign hands and that Sharp is rumoured to be leaning towards a deal with the Innovation Network Corporation of Japan instead.

8 Rental chain goes under

Xtra-Vision, Ireland's largest chain of DVD and BD rental stores, has been placed into provisional liquidation and ceased trading towards the end of January, at the cost of around 580 jobs. Holding company Hilco Capital blames weak sales in the run-up to Xmas for forcing the decision, but believes that the brand can live on as an online option. Its DVD vending machine business will also continue.

9 Epic release for epic film

It's been revealed that award-winning film historian Kevin Brownlow and the BFI National Archive have completed a new digital restoration of Abel Gance's 1927 masterpiece *Napoleon*. The overhauled version of this five-and-a-half-hour flick is set to land in selected cinemas and on Blu-ray, DVD and the BFI Player this Autumn.

10 Driven to excess

Porsche Design has unveiled a new soundbar that uses the actual rear silencer and twin exhaust from a 911 GT3. Priced around €2,900, the 911 Soundbar boasts 2.1-channel virtual surround (powered by DTS TruSurround signal processing), 200W total power output, coaxial and optical digital inputs and aptX Bluetooth wireless streaming.



PREMIERE

What's happening in the world of TV and films...

Deadwood still alive

HBO programming president Michael Lombardo has confirmed that the long-rumoured *Deadwood* film is going to happen. The swearsy series was cancelled back in 2006, leaving many plot threads hanging.

Fox re-possesses TV



20th Century Fox Television has revealed that it has ordered a pilot based on *The Exorcist*. The new show is described as 'a propulsive, serialised psychological thriller following two very different men tackling one family's case of horrifying demonic possession'. Sick bags at the ready everyone...

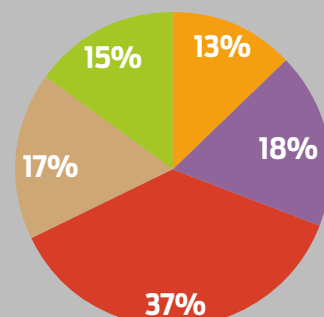
Avatar 2 delayed again

With James Cameron still too busy playing around with submersibles to actually start shooting *Avatar 2*, it comes as no surprise to learn that the film is going to miss its planned Xmas 2017 release date. At least this ensures that it won't have to go head-to-head with *Star Wars: Episode VIII* at the box office.

WE ASKED...

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Bridge of Spies → Region B & R2 DVD → 20th Century Fox Home Entertainment



Penned by the Coen brothers, directed by Steven Spielberg and starring Tom Hanks, *Bridge of Spies* recounts the true story of a Brooklyn lawyer tasked with negotiating a high-profile prisoner swap in Berlin during the Cold War. Twentieth Century Fox is bringing this lavish-looking 1960s-set thriller to UK Blu-ray and DVD on March 28, and our own spies tell us the BD platter will land with a 7.1 DTS-HD Master Audio mix and extras that dig deep into the movie's historical origins.



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CES 2016

World War 4K

While drone tech, futuristic cars and Virtual Reality clogged up this year's CES, the home entertainment industry set out to stun with new HDR displays and Ultra HD players.

Steve May reports

THE FUTURE OF home cinema became a lot clearer at this year's CES technology fest. Long-debated standards surrounding 4K Ultra HD found some solidity, 4K Blu-ray made an appearance and looked great, while high-resolution audio shifted even more from esoteric to everyday. CES 2016 was, in short, a cracking show for AV enthusiasts.

Given that El Niño had cast an uncharacteristically dull, wet cloud over host city Las Vegas, it was perhaps ironic that the only real sunlight to be seen emanated from the scores of HDR (High Dynamic range) TVs that dotted the Las Vegas Convention Centre. You didn't need shades walking The Strip, but they would have come in useful combating the glowing TV stands around the show.

Clearing the way was an agreed standard (of sorts). The UHD Alliance, which comprises TV manufacturers, chip suppliers and content providers, announced a specification and unveiled a logo for so-called Ultra HD Premium certified products. Victor Matsuda, UHDA spokesman, declared the badge would help consumers 'easily identify the best possible UHD experience.'

The good news is that HDR content will not be hard to find. 4K Ultra HD Blu-ray discs will arrive with HDR stickers on almost every slipcase, and even the OTT streaming giants are onboard. Amazon is already trialling HDR and Reed Hastings, CEO of Netflix, confirmed that the company would offer HDR programming to

subscribers over the next few months. Yet the UHDA has actually authorised two entirely different technical approaches to HDR, one suitable for LED TVs and the other OLED sets. From here on in, an HDR TV can boast Ultra HD Premium compliance if it offers more than 1,000 nits peak brightness and less than 0.05 nits black level, or more than 540 nits peak brightness and less than 0.0005 nits black level. This Ultra HD premium branding will appear on content, as well as hardware.

Panasonic was the first to claim compatibility with the standard, with its DX900 LED TV. Due this Spring in 58in and 65in iterations, the flagship screen offers a near OLED-style black level coupled with Fuji-high white peaks. Its dynamic performance has been made possible by the introduction of a honeycomb-style local dimming construction, said to minimise light leakage and haloes. The backlight design divides the picture into hundreds of individually controlled lighting zones, all isolated from each other. There are elements of design philosophy here which hark back to Pioneer's Kuro plasma panel construction, but that may be coincidence. Then again, maybe not.

The new set also sports an updated image engine tuned at Panasonic's Hollywood Labs facility, dubbed the HCX+ (Hollywood Cinema eXperience plus) video processor. From initial showings it would seem to indicate that the DX900 is already shaping up to be one of the standout screens of 2016.

LG is friends with everyone

Of course, the newly-minted UHDA standard doesn't mean an end to numerous variations on the HDR theme. LG revealed that it is working with Dolby to

incorporate proprietary Dolby Vision HDR technology into its TVs. 'Dolby is talking about having 50 movie titles available in Dolby Vision HDR this year,' LG's home entertainment product manager Robert Taylor told me. 'It's working with both Hollywood studios and Netflix. Dolby is really confident that its standard is going to be widely adopted.' While LG had no Dolby Vision panels

'With Ultra HD Blu-ray and Netflix and Amazon onboard, the good news is that HDR content won't be hard to find'

on display, I was told that development work has been ongoing since mid-2015. Consequently, its first Dolby Vision-enabled HDR screens are promised before Summer.

Taylor also revealed that the company was working with the BBC to integrate its 'Hybrid Log Gamma' HDR compatibility into its sets. It seems the brand wants to play ball with everyone.

In the meantime, the company aimed to impress with super-slim (just 6.6mm) 65in UH9500 and 86in UH9550 LED TVs, as well as 65in UH8500 and 75in UH8550 models. These IPS displays are designated Super UHD (reminiscent of Samsung's SUHD branding...) and feature new picture processing technologies including True Black Panel – an LG tech to minimise reflections and boost perceived contrast – and Contrast Maximizer,

Samsung dazzled CES attendees with a wall of HDR sets

CREATIVITY

CES NEWS IN BRIEF

From connected technology to see-thru TV

Home sweet smart home



Could the humble TV be staging a smart home *coup*? Both Samsung and LG promised IoT (Internet of Things) smart control for connected devices from within their respective TV environments. With the telly on the same network as your home automation devices, onscreen control is effectively wrestled away from smartphone and tablet. Other appliances are getting in on the act, too. We particularly liked the look of Samsung's Family Hub refrigerator, which features a huge 21.5in screen. This puts a whole new spin on the phase Netflix and chill...

The new looking glass



Ultra HD is one thing, but reinventing the form factor of TV is another thing entirely. Yet that's exactly what Panasonic did with a prototype transparent LCD screen that doubles as info and art display. In repose, the panel is part of a wall cabinet, revealing knick-knacks and books behind it on a shelf. One button press and the panel becomes an HD TV, ingeniously edge-lit. The panel can shift up or down, depending on whether it's going to be watched by kids or adults, and sensors beneath a rug are used to direct personalised TV sound around the room. No production date for the concept, but it's not difficult to imagine the tech turning up in one of Panasonic's smart home facilities.

which promises greater depth by separating objects from their backgrounds. The TVs also flaunt a sound system developed in conjunction with audio specialist Harman/Kardon. Here, a Magic Sound Tuning function measures and analyses the listening environment and makes adjustments to customise audio accordingly.

The high-end sets also boast an SDR-to-HDR conversion engine, said to deliver near-HDR content from any standard dynamic range source. This could turn out to be a hot topic with HDR, as Panasonic said it would not offer *faux* HDR processing on its sets.

Pushing the brightness boundary

The most dramatic demonstration of HDR could be found on the Sony stand. There the brand was touting Backlight Master Drive prototype HDR tech, able to deliver a dazzling peak brightness of 4,000 nits. This astonishing figure is achieved via a full-array LED backlight with over 1,000 local dimming zones. Not only does the backlight deliver precise, ultra bright peaks, it also enables blacks with little bloom or halo.

There's no doubt that the proto-display impressed. Demo footage of neon lights from the Las Vegas Strip looked astonishingly vivid and realistic, while deep blacks and shadow detail gave images almost holographic depth. But there was no talk of a road map for the technology.

When it came to actual product, the Sony booth featured only the incoming X93D/94D series, in 55in, 65in and 75in screen sizes. This ultra-thin range, with Slim Backlight Drive, is HDR compatible, but Sony declined to specify any peak brightness and didn't display any Ultra HD Premium branding. We might speculate that this is because the screen doesn't match the 1,000 nits specified by the UHDA standard. The company said it would use its own 4K HDR branding instead.



Top: The Ultra HD Alliance announced a new Ultra HD Premium certification logo to help consumers
Below: Sony demonstrates its Backlight Master Drive tech

Sony also confirmed that it was retiring its Wedge TV design for 2016, sticking with a same-as-everyone-else thin bezel going forward. Sad news this, as we've been a huge fan of the brand's Wedge and the fact it allowed for potent onboard speakers.

Elsewhere, Samsung had five new SUHD screens, with models ranging from 49in to 88in. Topping the lineup is the KS9500, touted as the world's first curved bezel-less TV (it looked like it >



LG has a phalanx of UHD TVs lined up for the year

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Panasonic demonstrated its DMP-UB900 Ultra HD player – set for a UK launch this Spring

had a bezel to me, but what do I know?). And just to show off, it also had a 170in SUHD engineering sample. Premier League footballers are probably already trying to place an order.

So it was full steam ahead for UHD TV at CES, and the stats back up the brands' optimism. Analyst IHS Technology predicts that annual worldwide shipments of UHD TVs will grow by nearly 719 per cent, from nearly 12million in 2014 to 96million in 2019. Some 300million 4K TVs will be in use by the end of the decade.

Of course Ultra HD doesn't stop at 4K – 8K (7,680 x 4,320) displays continue to leer tantalisingly from the wings. Panasonic, Hisense and Samsung all made stand-space for 8K panels. LG even went so far as to promise that it would have an 8K telly on sale before the year was out. Buying one this early might see somewhat reckless, but you can't help but admire its *cojones*.

High-performance playback

Perhaps the most eagerly awaited new tech to make its CES debut was 4K UHD Blu-ray. Panasonic immediately took to the high ground,

announcing the DMP-UB900 a year after teasing a prototype. This high-performance disc spinner combines UHD video performance with lots of nice audiophile frippery. It has twin HDMI's (useful if you want to deliver separate audio and video), as well as a 7.1-channel analogue output and support for the DSD audio format. Pricing has yet to be announced, but suggestions are it'll be just south of £1,000.

'The player has a very powerful processor and high-quality audio components, so it's not going to be cheap,' explained Panasonic's David Preece. 'We want to set the bar high. The UB900 delivers a level of performance that we've never been able to get in the home before.'



Hisense was among a number of brands flaunting 8K prototypes

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1. Aug 2015: Epson blind test between Acer H6510BD, BenQ TH681+, Epson EH-TW5200, Optoma HD26 and ViewSonic PJD7822HDL.
For further info on the test and on the 3x brighter colours data please see www.epson.co.uk/CLO

2. Survey conducted by Futuresource Consulting Limited for the period from 2001 to 2015.

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CES NEWS IN BRIEF

Lush long-players and Ultra HD enhancement

Vinyl revival meets high-res audio



When it came to sheer beauty, few things at CES compared to Technics' turntable revival. The rebooted hi-fi brand unveiled its first vinyl player since 2010, the new Grand Class SL-1200G, and its 50th Anniversary Grand Class sibling, the SL-1200GAE. The looks are ravishingly retro but there's new tech beneath the plinth. Technics has re-engineered its Direct Drive motor, using rotary positioning sensors guided by a microprocessor to eliminate vibration.

Differences between the models are slight: the SL-1200GAE is limited to 1,200 pieces worldwide, and features a magnesium tone arm; the unlimited SL-1200G uses aluminium. Both will sell for \$4,000 and are likely to appeal to audiophiles more than DJs.

Sony also rode the vinyl bandwagon at CES with the PS-HX500, the world's first turntable to allow users to rip vinyl in DSD formats.

Adding depth to 4K

DarbeeVision announced that it has finished work on its latest image processing tech, which sees the US corp targeting Ultra HD hardware. A new 4K/UHD Darbee Visual Processing (DVP) chip is to be made available to manufacturers eager to add 'embedded natural depth cues' to their products' armoury. 'New 4K/UHD content and display hardware may provide more pixels, more colours, more contrast, brighter back lights, and better dynamic range, yet what you end up with is a beautiful but flat image,' suggests Darbee.



Faraday Future's concept car intrigues CES visitors

Samsung put its own UHD BD player (the UBD-K8500) up for pre-order at the show, priced at a more modest \$400. This also has two HDMI outputs (having appeared in earlier form at IFA with only one), but it lacks the Panasonic's audio refinement. Another brand pledging a UHD spinner is Philips, with its BDP7501 deck.

Sony unveiled a new Blu-ray disc player, the UHP-H1, but this is not 4K UHD BD flavoured. Instead Sony intends to position the newcomer as a high-resolution audio player with video chops. This doesn't mean Sony won't launch 4K Blu-ray hardware at some point, just that it's in no hurry to be first to market. This appears to be a broadening ethos at the company, as we're still awaiting its first Dolby Atmos AV receiver in the UK.

The company hasn't given up on innovation, however – Sony continues to develop its intriguing Life Space UX concept. A Symphonic Light LED Bluetooth speaker attracted plenty of admiring glances, but I preferred an ultra-short-throw projector, equipped with internal speakers and battery. Easily transportable, it can throw a 22-80in

image onto walls, tables, or any other adjacent surface, making it a smart addition to bedrooms and media rooms.

Another avenue for 4K home cinema

The big projection story at CES was the reveal of 4K DLP for the home. Sony, with its SXRD models, has had the UHD home theatre scene to itself for years, but not for much longer, it seems.

Texas Instruments launched its consumer 4K DLP chipset. The technology is a downsized 0.67in version of its theatrical 4K chip; it combines the fast switching speed of DMD (Digital Micromirror Device) with advanced image processing techniques, to deliver more than 8million pixels to the screen using just 4million mirrors. Each mirror is capable of switching over 9,000 times per second, which TI says creates two distinct and unique pixels on the screen during every frame. This ingenuity is likely to prove contentious as the implications become clearer, but here the results looked stunningly good.

There were actually two 4K DLP demos at CES. TI was running a prototype single-chip lamp



LED TV's ability to hit 1,000 nits cements its HDR credentials



Optoma's pre-production 4K DLP projector

projector at 1,700 lumens. Demonstration footage, mostly featuring an owl and other wildlife, appeared suitably jaw-dropping, with super-fine detail, outstanding colour richness and a deep black level. Although a single-chip device, I spotted no DLP rainbow fringing in the image.

Elsewhere, Optoma had a prototype 4K DLP projector using an *en vogue* LED light source. This lacked the contrast and clarity of the TI 4K lamp demo, although when asked the company said it would most likely launch a lamp-based rather than LED-based solution first.

It's significant that the 4K DLP chip is only just larger than TI's current 0.65in 1080p devices, thus easing the burden on existing manufacturers. The first projectors to feature the UHD chip are expected towards the end of the year. No prices yet, but TI hinted that first models would be comparable with Sony's SXR range. Hopefully, that might kickstart a price war that end users can benefit from.

Away from bigscreen entertainment, Samsung – not necessarily a company known for its sonic ambitions – raised eyebrows with its first Dolby Atmos soundbar. The HW-K950 differs from Yamaha's YSP5600 Atmos model in that it ships with separate wireless rear speakers (with upfiring drivers). The 'bar' itself is just 2.1in high and features a trio of forward-facing drivers and a pair of ceiling pointers. Samsung says the combo (there's a sub, too) delivers a 5.1.4 Atmos soundstage.

The system was demonstrated on the Samsung booth, so naturally I had to get an earful. The result was interesting, but not in a good way. The rear speakers appeared to be delivering a full-range signal, rather than any Atmos information, resulting in a cacophony that sounded more like all-channel stereo than finely-honed 3D audio. Perhaps it was a mishap – we're keen to listen a lot closer to the HW-K950 when it arrives this Spring.

Virtual insanity?

And want something even more immersive than



wraparound sound? How about Virtual Reality?

This was clearly the major new trend at the show. Indeed, you could barely move for VR goggle-wearing users. A huge line formed for attendees eager to try out the latest Oculus Rift headset, which has a street price of \$500.

Industry watcher Piper Jaffray is bullish about VR, forecasting sales of 12.2million headsets in 2016. Of these, Oculus Rift is expected to account for 3.6million, and HTC Vive and Sony PlayStation VR bringing in 2.1m and 1.4m respectively.

And while Virtual Reality may be mainly about gaming, it seems traditional broadcasters are keen to get involved. Syfy has developed VR content to promote its sci-fi show *Expanses*, and NBCUniversal is also developing apps.

It's certainly a tech to keep an eye on in 2016 and beyond – if you can pull yourself away from Ultra HD and HDR, of course ■



Virtual Reality: the kind of tech that creates huge queues and idiotic photo opportunities



STUDIOS GEAR UP FOR UHD BLU-RAY LAUNCH

2016 slate of next-gen discs taking shape with both new-release and back-catalogue titles

All the hardware razzamataz of CES is pointless without content, so it was pleasing to see Ultra HD Blu-ray titles pushed centrestage.

Before show doors had even opened, Warner Bros. Home Entertainment was buttering up movie fans with the announcement of its initial run of Ultra HD Blu-ray releases. Four titles are set to appear in the first wave – *Mad Max: Fury Road*, *San Andreas*, *LEGO Movie* and *Pan*. The distributor says more titles will follow 'quickly', and will be a mixture of new releases available day-and-date with their initial home entertainment release and older fare. Of the latter, *Man of Steel* and *Pacific Rim* have been confirmed (Warner's vault includes the MGM archive – think *The Wizard of Oz* and *Gone With the Wind* – plus Peter Jackson's *Lord of the Rings/Hobbit* titles and Christopher Nolan's *Dark Knight* trilogy). It says over 35 titles will be available by the year's end.



Lionsgate Home Entertainment also has four titles for a March 1 release in the US – *Sicario*, *The Last Witch Hunter*, *The Expendables 3* and *Ender's Game*. In an interesting move, the suggested price for the latter two – both back-catalogue releases – is \$22.99 while the more recent flicks will land with \$42.99 price tags. All four UHD titles will sport next-gen audio, but system owners should take note that *Sicario*, *Ender's Game* and *The Expendables 3* will carry Dolby Atmos mixes, yet *The Last Witch Hunter* will feature DTS:X audio.

Twentieth Century Fox also added *The Martian* and *Hitman: Agent 47* to its previously confirmed UHD BD range (*Exodus: Gods & Kings*, *Chappie*, *Kingsman: The Secret Service*, *Fantastic Four*, *X-Men: Days of Future Past*, *Life of Pi*, *Maze Runner* and *Wild*) that will hit stores in March – and revealed it plans to have 100 4K platters out this year.

'NO, MR BOND, I EXPECT YOU TO...!

Flip a car? Race a speedboat?
Jump on an crocodile? Warming up for *Spectre's* Blu-ray
release on February 22, **Sean Hannam** picks the
007 franchise's very best death-defying stunts

CASINO ROYALE



Running on empty (11.38-16.05)

In this memorable chase set to David Arnold's dramatic score, Bond (Daniel Craig) pursues terrorist bomb-maker Mollaka (Sébastien Foucan) up a huge crane, across rooftops and through a building site. Foucan is no mere actor, of course – the freerunning pioneer incorporates the acrobatic discipline into the sequence, bouncing off rooftops and surfaces at high speed while a less nimble Bond relies

on his brute strength to keep up with his enemy – at one point, battering his way through a wall.

After the nonsensical, poor CGI sequences in *Die Another Day* – (glacier para-surfing anyone?) – *Casino Royale* strived to present a more realistic edge to the action beats that are at the heart of the franchise. This sequence, which took a total of six weeks to get in the can, was a perfect start.

GOLDENEYE



Oh, dam it! (00.45-02.29)

To infiltrate a Soviet chemical weapons facility, Bond (Pierce Brosnan) bungee jumps off a vast dam, fires a piton gun into the concrete roof of the building and hauls himself into the enemy's top-secret base. As you do.

This 720-foot jump was filmed at the Contra Dam in Verzasca, Switzerland and performed by stuntman Wayne Michaels. Director

Martin Campbell knows he's dealing with something special, shooting the scene from a dizzying aerial angle and putting nothing in the soundmix but the whistling wind.

The stunt set a then-record for the highest bungee jump from a fixed structure, and served as the 'Bond is back' opening sequence to 1995's *GoldenEye*, which came six years (the longest gap in the series' history) after its predecessor *Licence To Kill*.

THE MAN WITH THE GOLDEN GUN



A bridge too far? (86.19-87.13)

While tailing the villainous Scaramanga (Christopher Lee) and his midget henchman Nick Nack (Hervé Villechaize), Bond (Roger Moore) and his passenger, foul-mouthed Louisiana sheriff J.W. Pepper (Clifton James), are forced to carry out a ridiculous corkscrew car jump. Their red 1974 AMC Hornet hatchback uses a broken bridge as a ramp to perform a 360-degree barrel roll, which sees the car

travel through the air, over a narrow river, and land safely on the other side with barely a scratch.

It's an outrageous stunt, performed by Hollywood driver 'Bumps' Willard in one take and the first of its kind to be calculated using computer software. Shown in slow-motion, the sequence is accompanied by the noise of a slide whistle. The result? One of the greatest car jumps of all time marred by a silly sound effect.

THE SPY WHO LOVED ME



Downhill from here... (05.59-08.05)

Chased on skis by murderous Russian agents – and accompanied by a funky disco soundtrack – Bond (Moore, again) jumps off a cliff and plummets to what looks like certain death, but escapes by opening a Union Jack-embazoned parachute. As the 'chute is deployed, the James Bond theme tune kicks in and 007 proves that nobody does it better.

Perhaps the best pre-titles sequence of all the 007 films, the jump was performed by stuntman Rick Sylvester. Before he skied towards the precipice, second unit director John Glen gave Sylvester one piece of advice: 'Don't forget, Rick – you are James Bond.'

After he had completed the danger-fraught stunt, Sylvester, whose stomach had turned to jelly, rushed to the edge of the mountain, pulled his trousers down and... you can imagine the rest.

A VIEW TO A KILL



M'aidez for Mayday (17.51-19.28)

Grace Jones' villain Mayday flees from Bond, played by a somewhat wrinkly Roger Moore (donning the tux at age 58), by leaping off the top of the Eiffel Tower.

She makes her escape by parachuting over the Seine, with Bond following in a commandeered taxi, causing chaos on the streets of Paris. Mayday lands on a river cruise boat and 007 follows suit, leaping

off a bridge, falling through the roof canopy and ending up in a wedding cake. Yet he is left picking up the pieces while Mayday gets away in a speedboat.

After the tourist spot stunt was undertaken by BJ Worth, rumours abound that two of the crew went and made an unauthorised jump, as they were apparently so disappointed that they didn't actually get to leap off the Eiffel Tower. And it cost them their jobs. Whoops.

LIVE AND LET DIE



Get snappy (80.55-85.03)

In *Live and Let Die*, Bond becomes stranded on a tiny island which is surrounded by crocodiles. To escape the snappy reptiles, he uses three of the crocs as stepping stones, running over them to get to safety.

The most amusing stunt in the Bond series (if you ignore the animal cruelty), it was also paid homage to in *Skyfall*'s Komodo dragon sequence – *Live and Let Die* being Daniel Craig's favourite Bond flick.

The crocodile jump took five takes (you can find the outtakes online) and was performed by Ross Kananga, owner of the crocodile farm that was used in the movie. During one take, a croc snapped at Kananga's heel and tore his trousers. Kananga also wore crocodile shoes when he did the stunt – a gag suggested by Bond actor Roger Moore.

The filmmakers liked Kananga so much they borrowed his surname for Yaphet Kotto's drug-running baddie.

THE WORLD IS NOT ENOUGH



It's not Oxford vs Cambridge... (08.01 – 13.04)

Using the London skyline as a spectacular backdrop, this is part of the film's pre-titles sequence – the longest in the franchise to date at around 14 minutes – and sees Pierce Brosnan's agent chasing an assassin known as the Cigar Girl down the Thames in a gadget-laden jet boat from Q Branch. Property is destroyed, traffic wardens are soaked and Bond's boat does a somersault, travels underwater and

narrowly avoids being hit by a red bus when 007 decides to drive it down a road. The action culminates with the spy dangling from beneath a hot air balloon floating over the Millennium Dome.

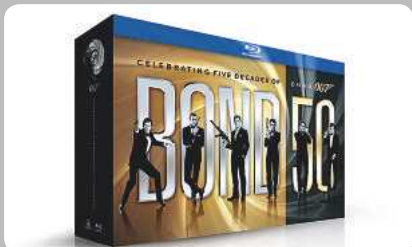
The blockbuster chase took seven weeks to film and wasn't first intended to be in the pre-credits reel – it was inserted after audiences in test showings said that the original opening scene, which included Bond jumping from a window in Bilbao, wasn't exciting enough.

Owning all of Bond on Blu-ray

There are boxsets available – but which one should 007 fans hunt down?

Blu-ray has been a Bond fan's best friend. The Daniel Craig franchise reboot flick *Casino Royale* enjoyed a cracking hi-def release in the format's early years, and, shortly after, MGM began issuing standalone releases for a selection of the series' back-catalogue titles, including opener *Dr No* and 1966 classic *From Russia With Love*.

Collectors of these discs were perhaps a little miffed when the *Bond 50* set debuted in 2012. This housed all 22 EON-produced movies (so not *Never Say Never Again*) and finished



with *Quantum of Solace*, plus a space reserved for *Skyfall*. Many who had been buying Bond disc by disc gave up on that idea, grabbed the boxset and tried to ignore the fact they now owned two copies of some of the flicks.



Last year a further set was released, including *Skyfall* and with space allotted for *Spectre*. But with none of the brilliant extra features and basic packaging, this should be avoided. *Bond 50* is still the set to own, even if it does sell for around £30 more.

LICENCE TO KILL



You're fired! (119.00-120.44)

Hell-bent on revenge, a brutal Bond (Timothy Dalton) is on a rogue mission to destroy the organisation of sadistic drug baron Franz Sanchez (Robert Davi).

In the climax of this 1989 entry – easily the most violent in the 007 franchise – the MI6 man sets out to thwart Sanchez's plans to transport four articulated tankers full of a mixture of cocaine and

petrol. Yet having hijacked one of the tankers and rammed another off the road, Bond is confronted by Sanchez's goons, who are armed with a rocket launcher. To dodge an oncoming missile he uses a (handy) ramp to tilt the truck on its side and motor down the road on two wheels. The producers aren't content to end the in-camera stunt there, though, having the truck continue on his wobbly path and destroying an enemy jeep. Handy.

DIAMONDS ARE FOREVER



What happens in Vegas... (66.57-68.00)

At the wheel of a Ford Mustang, Bond (played here by Sean Connery) is outrunning cops through the streets of downtown Las Vegas. To make his escape, he drives through a narrow alleyway (ignoring a 'Dead End' sign) by tilting the car on two wheels.

Impressive driving, certainly, but the scene features a major continuity mistake. When Bond enters the alley, he is driving the car on its two right

wheels, but when the Mustang emerges at the other end, it is wheely-ing on the opposite side. How so? Because the stunt was shot in two different locations – Universal Studios and Vegas – with different drivers and crews, and the gaffe was not discovered until much later.

To correct the mishap, a new shot was inserted into the sequence, where Bond and passenger Tiffany Case (Jill St. John) shift their weight, tilting the car in the other direction before it exits the alley. Clever, eh?

TOMORROW NEVER DIES



Bike vs Chopper (80.30-82.08)

Handcuffed together after escaping from the headquarters of mad media mogul Elliot Carver (Jonathan Pryce), 007 (Brosnan) and Chinese agent Wai Lin (Michelle Yeoh) steal a motorbike and rip through the streets of Saigon. Naturally, this being a Bond flick, they're shadowed by gun-toting henchmen, and soon they take to the rooftops in their getaway bid, only to be faced with a perilous

jump over the whirring rotor blades of a bad guy's helicopter. Second unit director Vic Armstrong described this action scene as 'extremely dangerous', which is probably putting it mildly. The bike was driven by motorcycle expert Jean-Pierre Goy, and his fall (through the roof of a building) was cushioned by a 20-foot-high pile of cardboard boxes. Ironically, Goy said he never drives a motorbike on public roads, because he thinks they are unsafe... ■

By special reQuest

This big cinema space required a big audio setup, including custom-made subwoofers from speaker brand Qusted.

Mark Craven reports

KIT CHECKLIST

SONY: VPL-VW500ES 4K projector

SCREEN EXCELLENCE: 150in projector screen using Enlightor 4K material

ANTHEM: MRX 510 AV receiver

OPPO: BDP-103EU Blu-ray player

KALEIDESCAPE: Premiere 3U server (54TB); Premiere M700 disc vault with M-Class player

SKY: Sky+HD box

APPLE: Apple TV

URC: MRX-20 network system controller; TRG-200 gyroscopic remote

QUESTED: 3 x LT10 LCR speakers; 8 x LT8 surrounds; 6 x ZUB 2.10 subwoofers; 3 x AP750-2 amplifiers; 1 x AP2800-4 amplifier; 1 x SBC800 LFE/sub-bass controller and amp

VAN DAMME: Speaker cabling

NETGEAR: 24-port Gigabit switch

PRO AUDIO STASH: 32U rack

LUTRON: Homeworks QS lighting

CINEAK: 12 x customized Strato armchairs; 2 x customized chaise longues



GOTHIC SONICS

Crimson Peak debuts on BD with a DTS:X mix, p96

'LARGE' IS THE word that first springs to mind with this professional home cinema. With the five-metre ceiling height and 9m x 7m floor space, it's a truly cavernous theatre. A 150in screen dominates the front wall, and there's seating for a 16-strong audience across three rows. There's plenty of acoustic science going on behind the scenes, too – because in this sort of space, a soundbar simply isn't going to cut it.

The project was part of an underground new-build, and left installer M.E.G.A AV with a few conundrums. 'It looked absolutely huge,' admits M.E.G.A.'s Zak Vrcevic. 'We knew that it would take a lot of effort and thinking to make it work.'

An initial consideration was sound insulation, on two levels. The cinema sits between a large plant room and a 'spa area.' For the best possible movie experience, thrumming noise from the plant room was not to be heard. Similarly, no one in the spa area needed to hear the sounds of rumbling subwoofers from next door. To tackle this, the room was designed with two wall layers: the first, a 30cm-thick outer layer provides audio containment; an inner layer (again 30cm thick) is used to handle acoustic treatment and speaker concealment.

'Given the size of the room, we knew that it required a proper acoustic design in order to perform well,' explains Vrcevic. 'Many bigger cinema rooms suffer in the acoustic department as owners are not prepared to sacrifice real estate space for proper sound treatment, and rooms end up under-performing.'

'While most home cinema equipment is made to sound decent even without any acoustic treatment, >



This in-progress pic (right) shows the scale of the room

the difference is staggering when the room is properly designed.'

So what tricks did M.E.G.A AV employ to get the vast room up to standard? For LFE control, the whole of the room's back wall became a custom-made wide-range bass trap, ensnaring rogue low frequencies. Side walls are lined with a combination of diffusers and 30cm-deep absorbers tuned to specific frequencies. All the room's speakers are positioned on purpose-built pads to limit vibration, with all the surfaces then covered in fabric panels (sixty-four in total), removable to allow for maintenance and service.

New sub required!

For the audio system and 105dB peaks in mind, speakers and power amps from American brand Quedsted were chosen. Three LT10 models are used for the LCR stage, joined by eight LT-8 surrounds and half-a-dozen ZUB 2.10 woofers. The story behind the latter is a bit odd, though, as Vracevic explains: 'We couldn't fit Quedsted subs behind the screen as they were massive, but Roger [Quedsted, company founder] offered to design a slimmer version for us! That became a ZUB 2.10, with two 10in drivers, which is now part of the Quedsted lineup.'

A seven-channel Anthem MRX 510 AV receiver is in the kit rack, but with those Quedsted amplifiers employed, it's for processing duties only, with Anthem's ARC room correction suite on hand as a backup to fettle the soundfield. As it happens, the installer reveals the room treatment and speaker selection/placement meant nothing was necessary beyond sub-bass EQ and crossover tweaks, which were performed by Roger Quedsted himself.

For visuals, Sony's VPL-VW500ES Ultra HD projector works in conjunction with the Screen Excellence screen, Oppo BD deck, Kaleidescape system (54TB!), Sky+HD and Apple TV source gear. The £8,500 PJ isn't the ultra high-brightness (and highly expensive) model you might expect from a room of this ilk, but provides both a level of 4K futureproofing and – importantly – allowed the build to come in on budget.

Naturally, the cinema benefits from integrated control, with a URC MRX-20 back-end and a motion-tracking remote. Custom code was written for the URC control gear to enable bootup of the power amplifiers, via rack-mounted power distribution units; the amps are set to fire up sequentially, with three second gaps to avoid current surge. The URC system also commands Lutron lighting, triggering various preset scenes.

The complex build and installation meant the room came together over the course of months rather than weeks. And the first movie that was run through the system? *Mad Max: Fury Road*. Good choice! ■



All the seating is from Cineak, bespoke designs with adjustable head/footrests, warming/cooling cup-holders and USB charging points for your 'phone

The AV rack (left) houses an Anthem MRX 510, used for processing duties and feeding the Quedsted amplifiers; (below) Quedsted LT10 speakers, mounted to ZUB 2.10 subwoofers, awaiting installation





Photo: Musical Images installation

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REVIEWS

→ **HARDWARE** KEF New Reference speakers in a 7.2.4 guise **HISENSE** 65in 'ULED' 4K HDR curved TV **JVC** D-ILA projector with 4K eShift and HDR support **Q ACOUSTICS** Top-of-the-range Concept 5.1 speaker pack **BENQ** Full HD DLP projector **LG** 55in OLED TV **PANASONIC** Mid-range 4K TV and Freeview Play PVR **SONY** RT5 soundbar **ONE FOR ALL** Affordable universal remote **AND MORE!**

The Equaliser



With Dirac Live EQ onboard, Arcam's high-end AVR850 promises surround sound nirvana – p46

HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

Premium towers



Adam Rayner falls in love with KEF's high-end 7.2 loudspeaker system



IN 1961, RAYMOND Cooke took over the Nissen hut used by wartime company Kent Engineering & Foundry in Maidstone and started to produce loudspeakers that were branded KEF. And the rest, as they say, is history – the company has become an industry stalwart and the visionary speaker designer's awesome body of work has been imitated by others.

The latest of its doctorate designers with lots of letters after his name is responsible for the eleventh – yes, eleventh – iteration of KEF's famous Uni-Q coaxial transducer. That Dr Jack Oclew-Brown, PhD, MEng, looks like he still does not need to shave much merely makes me feel old – I first enjoyed KEF's Reference speakers back in 2008. Since then, the line has been revamped, further developed and taken to another level of potency.

The new range actually launched in 2014, but at first was a hi-fi proposition only. Production of the all-important centre channel speakers didn't begin in earnest until after KEF had satisfied the demands of those who had pre-ordered its floorstanders and standmounts.

This is why I found myself in Maidstone yet again. Last time I visited I literally raised the roof and frightened KEF's receptionist, as the demo room is close by the entrance. This time I was relieved to find that the receptionist wasn't there.

And I had to head to Maidstone because KEF's Reference speakers – especially those auditioned here – are sizable enclosures, and a review just wouldn't have been feasible in my abode. I've made similar trips to listen to Focal's Utopia range and a JBL Synthesis system. As always, I must stress that my listening took place in a professionally treated room – a room, in fact, that now houses four of the best-selling KEF Ci2200RR-THX

AV INFO

PRODUCT:
High-end 7.2 floorstanding array

POSITIONING:
The Reference is – unsurprisingly – KEF's flagship home cinema product line

PEERS:
Monitor Audio Platinum; Bowers & Wilkins 800 Series Diamond; JBL Synthesis



in-ceiling speakers. This is like a shop ceiling speaker, in the way that a moped is to a Maserati. At 'only' £450 each, these nine-inchers (with a Uni-Q driver in a shallow box, using the ceiling itself as the 'enclosure') did an astonishing job of putting the lid on the Atmos system I was to experience. But more on that later.

Loudspeaker luxury

What I had to listen to was a sumptuous statement of loudspeaker luxury. The revamped KEF Reference speakers are objects of profound craftsmanship taken to artistry, and with a timelessly classic look that belies the intensively-developed and human-ear tested research under each shiny exterior.

They come in choices of finish so pretty it'll be a struggle for buyers to pick one. First is, of course, an ultra high-gloss Piano Back (with silver fronts), which is photographed here. Then there are pair-matched veneers of Satin American Walnut or Luxury Gloss Rosewood, both wearing multiple-layered lacquer. And then there are two special Kent Engineering & Foundry Editions – Blue Ice White and Copper Black Aluminium – which not only redress the sides but the front face, too. That last is so gorgeous it hurts.

The array here is probably the most premium that KEF can assemble and anyone would ever install. It comprises a pair of the £10,500-per-pair Reference Model 5 floorstanders on front left/right duties, with

the sideways behemoth that is the Reference Model 4c as the centre channel enclosure. The Reference Model 3 towers are used as surround and rear channels.

As befits a high-end setup, there are two subwoofers (the Reference 8b); bipolar designs employing dual 500W amplifiers and twin 9in bass drivers arranged in a bipolar configuration. As far as premium subs go, they appear almost petit, yet weigh in at 35kg each.

A fantasy system, then, yet the good news is that KEF's Reference range certainly allows for scaled-down setups for those with smaller rooms and budgets. Use the Model 3s up front, opt for the smaller 2c centre, a pair of Model 1 bookshelf speakers for the surrounds and a single 8b woofer and you'd arrive at a 5.1 system still of serious potential.

This setup was £38,000 worth of loudspeakers (£39,800 including those four in-ceiling models). And that is not to count the Chord speaker cables and interconnects, Arcam processing and heavyweight Arcam two- and three-channel component amplifiers used to offer monstrous headroom.

One of the cleverest things about KEF's Reference line – and this multi-speaker system – is that the same two (well, three) transducers are used all around, which brings with it benefits in tonal cohesion.

The 11th-generation Uni-Q has a 1in aluminium tweeter at its centre with a 5in midrange transducer in perfect synergistic harmony; the high-frequency unit using the rest of the driver assembly to disperse its sound coming from the tangerine wave guide. And this acoustic science is at the heart of each Reference speaker – literally, when you consider where the Uni-Q's are sited on the front baffles.

The loudspeakers then wear one, two or four of KEF's new 6.5in bass drivers. Again, these use aluminium for its rigid and light properties, and the shallow discs attach to their large diameter voice coils via a vented coupler, and innovation trickled down from KEF's Blade speaker.

And the cabinets themselves have been



For much of this audition, KEF's Reference system was topped off by a quartet of in-ceiling Ci2200RR-THX speakers. These are not part of the Reference stable, but they employ Uni-Q drivers for a close tonal match

The 8b subwoofer uses twin 9in bass drivers individually powered by 500W onboard amplifiers



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thoughtfully designed, braced and damped to eradicate colouration or other sonic nasties.

Performing like paragons

So what's it like? How can a speaker system cost forty-thousand pounds? By using objects crafted with exquisite attention to detail; by having huge man-hour counts under their phenolic resin composite baffles; by having every single part listened to as well as electronically modelled before construction; and, most of all, for performing like paragons.

I sat down to listen feeling deliciously guilty at the fact that this was my job. First, KEF insisted on running through a few demo Blu-ray tracks from Dolby to demonstrate the system's capabilities, including an audio-only one of a helicopter moving around that was so bad it was funny, from a pure sound design point of view.

Not to worry: I called up the opening sequence from Angelina Jolie's Dolby Atmos-flavoured war-tinged drama *Unbroken*, where the American bomber planes encounter 'ack-ack' fire and a swarm of Japanese Zero fighters. The experience was of surround sound power and impact the like of which I have never experienced before. I have felt louder, even though this setup was able to go to extreme levels, yet the sheer insanity of the dynamics was linked to a beauty and poise. With *Unbroken*, the anti-aircraft fire was terrifying, the Zeros' bullets whizzing through the air were divorced from any cabinet locational cue and I ducked a few times involuntarily. I was more 'there' in the action than I'd ever imagined. The soundfield just wasn't coming from the Reference speakers – it was literally all around me. I got goosebumps.

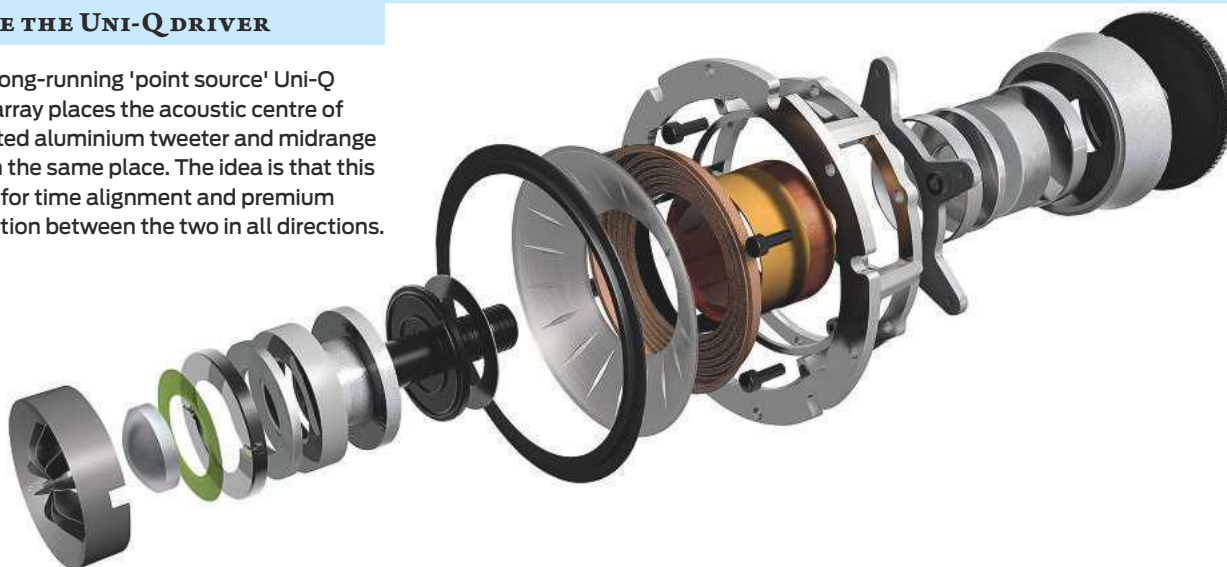
It's the kind of performance that really immerses. For instance, when the Zero flies at and underneath you, past the broken bomb doors and strafing as it comes, I all but leaped



The 6.5in bass drivers are a new KEF design

INSIDE THE UNI-Q DRIVER

KEF's long-running 'point source' Uni-Q driver array places the acoustic centre of its vented aluminium tweeter and midrange units in the same place. The idea is that this allows for time alignment and premium integration between the two in all directions.



off the comfy sofa, lifting one knee off the floor in case I got shot.

A comparison of the full Atmos system versus 5.1 was insightful – the 'flat', semi-skimmed system still impressed with a level of performance that any owner would be happy with. KEF's Reference models dig out detail so epic that you'll hear things in soundmixes you hadn't been aware of before.

Back at 7.2.4, and Alfonso Cuarón's *Gravity* (Blu-ray) further proved the system's high-end merits. This film frightens me, over and over, and from its very beginning in Atmos

'While the sheer scale of the system seems without limit, sonically everything is utterly clear and clean'

it's literally breathtaking. Most of you will know the sequence. It starts in orbit, with a text crawl about how sound doesn't travel in a vacuum, accompanied by a crescendoic swelling tone that gets bigger and bigger and stops abruptly, leaving just radio chatter from the astronauts that we're drawing closer to. That overall 'whoosh' of lossless audio gets far louder than you think it will and there's always the danger of the soundstage seeming congested, and the speakers making a general row. But the Reference resolved this tricky audio without the harshness that hard domes

can do, and with the snap and dynamic attack that seemingly only massively-gripped aluminium cones can manage. These drivers can stop hard, and the very instantaneousness of that halt leaves you gasping.

And then there was the wittering of Houston and George Clooney and Sandra Bullock. Crystal-clear but slickly located behind me and to the right, before the POV moves in a manner to emulate how nauseating free-fall actually is and the sounds of the radio operators swirl around seamlessly. The soundfield, with those floorstanders attending behind me, was seemingly gapless.

So while the sheer scale of the system seems without limit, sonically everything is utterly clear and clean, and capable of brilliant intimacy. Moving to a gunplay-heavy sequence from *Jupiter Ascending* also bore that out. Copious detailing and massive impact were in evidence at the same time.

Gravity's drop from loud to soft is, I think, the biggest dynamic gap test in our world right now. And the bottom end is also abused by the sound designers, with use of huge bassy tones to add fear (the film also features some nasty high-pitched whines to put you on edge). The 8b subwoofers come into their own here. Rated to reach comfortably down to 18Hz, they exude depth, scale and slam.

Yet perhaps the best test of the system's overall low-end output was not the huge and fear-inducing LFE wobbles that Hollywood is so in love with, but rather the control, leading-edge accuracy and speed required to deliver the performance of an acoustic jazz bass. *Legends of Jazz* on Blu-ray is a great platter for these occasions, specifically Jane Monheit performing *They Can't Take that Away from Me*. The recording was simply beautiful to listen to. The musicality of these speakers and their almost invisible nature will delight any audiophile, and that bass was cohesive, rich and taut.

A new high

So should you invest in The Reference? I'm not your bank manager so I can't make that decision for you. All I can say is that if you want true top-end performance and to enjoy owning loudspeakers, then these are a new high that can compete for output with rather more industrial-looking products, yet exude such design presence that they will make a statement. As objects, they are lush to behold, and incidental details, such as the rotatable terminals that easily allow single- or bi-wired hookup and the heavy steel bases with spikable outriggers, add even more pride of ownership. You will need to want to use the system a lot to justify the cost, but you can spend way more and get merely brutal.

This system is British surround high-fidelity at the utter state-of-the-art. And it's easily worthy of its Reference name ■

SPECIFICATIONS

REFERENCE MODEL 5

DRIVE UNITS: 1 x Uni-Q driver array comprising 'tangerine' wave-guided 1in aluminium dome tweeter and 5in aluminium midrange; 4 x 6.5in aluminium bass drivers
ENCLOSURE: Three-way, bass reflex. Twin rear-ported
FREQUENCY RESPONSE: 40Hz-35kHz
SENSITIVITY: 90dB
POWER HANDLING: 50W-400W
DIMENSIONS: 1,397(h) x 349(w) x 470(d)mm
WEIGHT: 60.2kg

REFERENCE MODEL 4C

DRIVE UNITS: 1 x Uni-Q driver array; 4 x 6.5in aluminium bass drivers
ENCLOSURE: Three-way, bass reflex. Twin rear-ported
FREQUENCY RESPONSE: 48Hz-35kHz
SENSITIVITY: 90dB
POWER HANDLING: 50W-400W
DIMENSIONS: 1,090(w) x 205(h) x 470(d)mm
WEIGHT: 45.2kg

REFERENCE MODEL 3

DRIVE UNITS: 1 x Uni-Q driver array; 2 x 6.5in aluminium bass drivers
ENCLOSURE: Three-way, bass reflex. Twin rear-ported
FREQUENCY RESPONSE: 43Hz-35kHz
SENSITIVITY: 87.5dB
POWER HANDLING: 50W-300W
DIMENSIONS: 1,202(h) x 349(w) x 470(d)mm
WEIGHT: 51.3kg

REFERENCE MODEL 8B (SUBWOOFER)

DRIVE UNITS: 2 x 9in pressed aluminium long-throw bass drivers in bipolar configuration
ENCLOSURE: Sealed
FREQUENCY RESPONSE: 24Hz-160Hz (+/-3dB; -6dB 18Hz)
ON BOARD POWER: 2 x 500W Class D amps
REMOTE CONTROL: No
DIMENSIONS: 365(w) x 398(h) x 429(d)mm
WEIGHT: 35kg
CONNECTIONS: Phono input; phono output; XLR input; speaker-level inputs

HCC VERDICT

KEF The Reference 7.2

→ £38,000 approx → www.kef.com
→ Tel: 01622 672 261

HIGHS: Limitless scale; awesome fidelity and musicality; delicious sonic imagery; truly beautiful to behold

LOWS: Centre channel speaker is huge; system is kinda expensive...

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★



This range-topping TV from Hisense comes loaded with tech, says **Steve May**. Will it turn heads?

High hopes for 'ULED' debut

IN THIS PIXEL-PACKED world, it seems prosaic labels for new TV technologies just aren't enough. We demand suffixes that promise more. Hisense, the giant Chinese TV brand now making in-roads into the UK consumer market, has bagged ULED. It certainly sounds suitably futuristic.

Yet there's a fair degree of marketing flimflam about what ULED actually is or means – as far as I can tell it's an umbrella reference to the Quantum Dot colour filter used by the set, as well as the backlight control of its rear-mounted LEDs. So ULED may not be anything fundamentally revolutionary, like OLED, but it hints at something a bit special.

I'm actually surprised Hisense didn't opt for P-LED – for Premium. It's an adjective that crops up a lot when you talk to the brand. For better or worse, Chinese TVs have a reputation for being cheap and cheerful. Hisense, however, is keen to stress it can assemble TVs with higher aspirations. And it's more than half way to convincing with the 65XT910.

This curved 65in set boasts local dimming LED control, onboard HEVC (for 4K Netflix and Amazon) and VP9 (for 4K YouTube) decoders, plus HDMI 2.0 with HDCP 2.2. It's far from scruffy when it comes to design. Yet it's priced beneath many of its comparable market-leading East Asian rivals. So is this upstart dragon too good to be true?

A slice of style

The XT910 (sometimes referred to as the LTDN65XT910XWTSEU3D) is certainly a good-looking telly. It's curved – quite overtly so – and sports a thin bezel with matching chromed stand. I still flatly refuse to endorse the concept of curved TVs – they makes EPGs look foolish and offer no noticeable viewing benefit – but will concede that off-angle viewing on the XT910 is good, with no obvious loss of contrast or colour.

The set may not be particularly thin, but this obviously isn't an issue when you're sitting square-on. It reclines slightly on two stabilising feet, which gives it a bit of an imperious pose.

As advertised, the XT910 supports HDCP 2.2 sources, but only on two of its four HDMI inputs (3 and 4). This could perhaps prove limiting if owners intend to invest in a variety of 4K content sources – a 4K streamer, 4K UHD Blu-ray and Sky Q box for example. The set is compatible with dual-band Wi-Fi, giving you the option to connect to the generally less congested 5GHz band.

In addition to Freeview HD, there's also a single generic (not Freesat) satellite tuner. The TV will record to a connected USB hard drive.

Hisense's user interface is clean and unfussy – there's no LG WebOS cleverness here. Setup offers three configuration modes, which is unusual. In addition to Home and Shop, there's Premium, which promises best performance but with increased power consumption. With this mode I measured a draw of 227W on average, so it's not anything which should concern owners. If you lived with a big plasma back in the day, that would have drained the National Grid of twice as much.

As a rule of thumb, Premium mode proves to be much brighter than Home. Consequently I'd advise caution if you tend to watch in lighting-controlled rooms. Colour vibrancy is high, and the set oversaturates. I actually preferred the TV in its Home default, which takes some of the intensity away, making for a more comfortable watch.

Hisense is going its own way when it comes to smart TV. The result is a rather simple portal >





HB OMG!
Game of Thrones'
 fifth season lands
 with Atmos, p99

AV INFO

PRODUCT:
 65in UHD TV at a
 mid-market price

POSITIONING:
 Flagship curved
 UHD screen

PEERS:
 Panasonic
 TX-65CX802;
 Samsung 65JS8500



Hisense's flagship set embraces the curve



The 65XT910's sleek chromed stand is full width

with little in the way of catch-up TV. It utilises a tiled design, with the main page touting BBC iPlayer, Sport and News apps, Netflix, Chili Cinema and YouTube. The Hisense app store also includes Plex and DailyMotion alongside the usual twaddle. A Quad Core processor is at play here, but navigation can still seem a bit ploddy. Menus are quick to disappear, too, although the timeout can be adjusted.

'Hisense's 65XT910 is competitively priced and has plenty of eye-candy appeal – worth an audition'

The onboard media player, with both network and USB sources, is very good. I successfully played MKV, WMV, MP4, AVI and MOV video files, as well as MP3, WMA, WAV, AAC and FLAC audio rips.

Making a stand with Standard

The image presets offered are Standard, Dynamic, Natural, Theatre, Game and Sport. I'd say the best all-round option for those uninterested in tweaking is Standard.

Picture quality is entertaining, but there are caveats. Out of the box, the XT910 tends to over-sharpen everything. You'll need to dial back the sharpness setting to zero to remove unwanted ringing. Contrast can be enhanced via an adaptive contrast control; this darkens blacks but also squashes shadow detail.

Raw image resolution looks gorgeous with UHD material. The Netflix 4K app was the only source of 2,160p programming during my audition (Amazon is promised to arrive very soon), and it's encouraging to report the screen looks great with the good stuff. For extreme detail and depth, one of the best-looking streams to be had is Adam Sandler's *Ridiculous 6*. On the 65XT910, its Wild West vistas are gloriously intense.

And the TV also shines with 1080p. I never got the sense the panel was doing anything

particularly clever with detail or texture algorithms, but that didn't stop the big CGI close-ups in *Jurassic World* from being a grin-inducing visual delight.

Hisense's TV does a solid job handling dark scenes; the local dimming tech has no problem with my reference material, like Uma Thurman's live burial in *Kill Bill Vol 2*. The LED array uses 240 controllable zones to minimise halo effects and blooming.

Yet motion handling is the XT910's Achilles' heel. An Ultra Smooth Motion (SMR) interpolation mode, which can be set to Low, Middle or High, is actually best left off. Do this and motion resolution peaks at around 950 lines at 6.5 pixels per frame, using a 1080p monoscope. There's motion blur and judder on horizontal pans but no unsightly artefacts. Switching processing to Low doesn't restore motion detail, but it does smooth out those pans, although it appears to skip frames. Crank up the processing to Middle or High and it induces very obvious motion noise, although fine detail is preserved.

Another potential issue for buyers is that this active 3D TV (sold with one pair of 3D goggles) exhibits high levels of crosstalk, making for a generally uncomfortable dimensional experience.

It creates more of a good impression when it comes to audio. Thanks in part to licensed dbx-TV DSP, it has copious volume and clarity. I don't think owners will feel an immediate need to invest in a soundbar.

Credible competitor

With the XT910, Hisense has made a credible move into the high-end TV space. The set is competitively priced and has plenty of eye-candy appeal. The company says it is HDR compatible, too – and may even be so by the time you read this courtesy of a firmware update (during my audition it was SDR only).

I think there are improvements to be had when it comes to motion handling and upscaling, and the smart platform lacks catch-up options, but as a low(er)-cost bigscreen option it's undeniably good value. Well worth an audition ■

ON THE MENU



→ The smart portal here is not cutting-edge (and lacks some of the main catch-up players) but it's simple to get to grips with

SPECIFICATIONS

3D: Yes. Active Shutter

4K: Yes. 3,840 x 2,160

TUNER: Freeview HD; DVB-S2

CONNECTIONS: 4 x HDMI inputs; 3 x USB inputs; Scart; component video; composite video; digital optical audio output; Ethernet; built-in dual-band Wi-Fi

SOUND: 2 x 15W

BRIGHTNESS (CLAIMED): N/A

CONTRAST RATIO (CLAIMED): N/A

DIMENSIONS (OFF STAND): 1,446(w) x 839(h) x 152(d)mm

WEIGHT (OFF STAND): 32kg

FEATURES: USB and network multimedia playback; HEVC decoder; VP9 decoder; smart portal featuring Netflix 4K and (via firmware) Amazon 4K; Quantum Dot colour filter; HDR via firmware update; Ultra Smooth Motion (SMR) interpolation mode; curved design; USB recording

HCC VERDICT



Hisense 65XT910

→ £2,300 approx → www.hisense.co.uk

→ 0113 395 6930

HIGHS: Bright, vibrant images; effective local dimming technology; smart looks; HDR-ready; a bigscreen TV at a reasonable price

LOWS: Limited catch-up TV options; average motion handling; navigation a little ploddy; not all HDMI inputs support HDCP 2.2

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

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Seizing the crown

Jon Thompson believes Arcam plus Dirac Live EQ is a match made in Dolby Atmos heaven



No front HDMI input? Oh well...



AV INFO

PRODUCT:

High-end
7.1-channel Dolby
Atmos AVR

POSITIONING:

Arcam's flagship
integrated AV amp

PEERS:

Yamaha CX-A5100/
MX-A5000;
Marantz AV8802A

THE HOME CINEMA industry has been in something of a rut since the financial meltdown of 2007, with gaping holes where much of the high-end market used to be. But Arcam's latest integrated AV receiver has me thinking we may be seeing the light at the end of the tunnel.

This relatively small English company, famous for its hi-fi equipment, threw itself back into AV in a big way with the AVP950 (processor) and AVR750 (receiver) a couple of years ago – both very solid-sounding devices, top-notch in their price bands. It then launched the well-respected UDP411 Blu-ray player, and follows it with the AVR850 on test here. And this is no mere upgrade on the AVR750 – it's a different beast altogether. And Dolby Atmos is partly responsible.

Times have changed in the world of professional cinema audio. Atmos has introduced all those channels and speakers. The spec supports 128 independent soundfields you can steer a movie's sonics across. Timbre-matching becomes a real issue. Handy, then, that back in 2003 Dolby purchased Australia-based Lake Technology Limited, which had produced an audio correction system that could apply a real-time EQ to give a uniform timbre. Dolby was thinking way ahead; in 2012 it was able to launch the CP850 processor, the first pro cinema product to use 'Dolby Lake' processing for EQ. Old-school parametric EQ was no longer up to the job of matching all the soundfields.

But when Atmos was launched domestically, Dolby Lake processing stayed behind closed doors. So what's the alternative? Dirac – a high-end EQ system from a company founded 15 years ago by professors and Ph.D. students at Uppsala University. Essentially, Dirac's multichannel EQ is very similar to Dolby Lake. It appeared on Datasat's premium RS20i processor a couple of years ago, and now finds its way into Arcam's flagship AV receiver. The promise is multichannel sound of unrivalled accuracy.

In a Class G of its own

Arcam's AVR850 is not cheap. At £4,200, it's the most expensive integrated amp on the market that I can think of, more expensive than flagship processors from the likes of Marantz and Onkyo. It uses Arcam's traditional audiophile Class G power amps, here rated at 100W-per-channel.

Excavate the AVR850 from its box and you'll discover it's fairly heavy (16kg) and offers the typical Arcam design. There's a big volume knob in the middle of its fascia with basic function buttons arranged either side. The finish is a nice matt black and the build seems >

Arcam's AVR remote control is surprisingly uncluttered





The AVR offers four height-speaker pre-outs

solid. It'll look particularly good racked with other Arcam hardware.

There's an array of rear-mounted inputs, but perhaps not the forest you might expect. Connections include seven HDMI inputs, at the 2.0a spec and with HDCP 2.2 support. There are no analogue video inputs at all, but I doubt that's an issue for anyone. There are three HDMI outputs – two for a dual-screen system and one for a second video zone.

For external non-video sources you'll find six sets of analogue stereo inputs. There are also four coaxial digital audio ports, plus a couple of optical ins.

Adjacent to the row of chunky speaker terminals sits a 7.1 compliment of phono preamp outputs should you want to use the AVR850 as a processor only. Above these are four extra phono outputs labelled for height channels, which is an indication of one of the AVR850's limitations – this is only a seven-

channel amp. Extra power amps are required if you want to run any Atmos array beyond 5.1.2. This is not an out-the-box full-fat Atmos solution – in the style of Onkyo's TX-NR5010 – despite the asking price.

IR, RS232 and 12V ports cater for advanced system setup. There is an Ethernet port, but no Wi-Fi. Personally, I think that is a good thing as you don't want a high-powered radio transmitter in a high-quality audio device. A DAB/FM antenna socket, USB port and a 6V accessory output complete the rear-panel deal. Only headphone and 3.5mm inputs reside on the front fascia.

This AVR is like most of its high-end brethren – it's all about audio and on the video side offers switching but nothing more. Yet there's nothing wrong with this as the video processing options on mass-market receivers can often make pictures look worse than they should.

Nostalgic user interface

Switch on the AVR850 and you'll immediately discover an area where Arcam could make some improvement. It's purely cosmetic and has no effect on sound or image quality, but the main menu looks like a bit like a 1990s BBC engineering page. It's easy to read and functional – initial setup is straightforward and easy to do – but in no way slick or sexy.

I began by listening to the AVR850 in stereo. My mantra is that if a processor can't do a good job in stereo mode it won't have a hope in hell in multichannel. CDs played via the coaxial and then analogue inputs impressed – the Arcam showed pace and rhythm; timing seemed spot on and the created soundstage was wide and deep. My one complaint, music-wise, is that the headphone jack is 3.5mm.

Away from physical media, the AVR850 doubles as a network audio player. Arcam's



Dirac Live: getting ahead of the curve

This laptop screengrab illustrates the work done by the AVR850's Dirac Live system to counter speaker and room characteristics. The light blue line is the measured in-room response of my front left/right Bowers & Wilkins speakers. In particular, there's a noticeable dip at around 80Hz and pronounced high frequencies (the latter a talent of the company's tweeters). The orange line is the target frequency response (Dolby X curve) that I wanted Dirac Live to help my cinema system achieve (with its tapered off high-frequency output). The green line is the eventual measured result – as you can see, it's very close.

iOS MusicLife UPnP/control app is good and responsive, and will connect to audio servers to dig out your collection of hi-res and MP3 audio files. There's no DSD support, however. Oddly, considering the brand's history regarding its iPod speakers, there's no Apple AirPlay either.

As for home cinema multichannel, the unit supports DTS, Dolby TrueHD and Dolby Atmos off the shelf. DTS:X will be added via a firmware upgrade; Auro-3D, which has had some minor traction in the form of the Blu-ray disc *Pixels* from Sony Pictures, is absent. Of the three next-gen formats Auro-3D seems to be the least likely to have any impact, and DTS:X – as of writing this – seems to be struggling. Lionsgate, which had supported the latter theatrically with the likes of *Sicario*, has now released that title in Dolby Atmos on BD.

AV bake off

The AVR850 is sonically a *tour de force*, and the icing on the cake is Dirac. In the consumer space, this is certainly the EQ system that well-heeled buyers should be clamouring for.

Dirac analyses your room, listens to each speaker in your setup, looks at its characteristics and presents them in a graph. The longer you spend measuring your room – the more points you analyse – the better correction you'll get. Eight to 12 points seems

'If you need a Dolby Atmos receiver and want the best around, the Arcam AVR850 is probably it'

to give you a nice result in an average-sized theatre. You can just do one if you want, but Dirac's understanding of the issues in the room will be limited.

Once you have all your analysis data, this is sent via the net to Dirac's mainframe computer along with the output curve that you would like as a target. It then throws more Petaflops than you need to know at it and sends a correction curve that the AVR850 can apply to all the speakers to produce an almost perfect response. Phase and time alignment are all part of the package.

And it can tune your subwoofer too. A room can have more of an effect on a sub than we often realise. Dirac's analyse of mine revealed it was offering a very narrow band of energy, overpeaking at around 70Hz, producing a lot of bang but not much crash. Using Dirac I tuned it to produce a near-flat response from 20Hz-100Hz. The difference became staggering; the whole system not only sounded much more integrated but with greater body and LFE detail.

I went one stage further and used three different speakers from three manufacturers across the LCR stage, all with their own unique timbre. I let Dirac see if it could match them, and it did, taking a trio of speakers and making them sound the same. Not in a bad way, either: they sounded how you would want them to.

Calibration complete and with the Arcam front-lining a 7.2.4 Atmos array, it proved to be the closest I have heard a home cinema come to sounding like a pro theatre.

My still-favourite demo disc – *John Wick* on Blu-ray – was a delight. The Red Circle club sequence is painfully good as you can hear all the delicate details of the violence (slicing blades, tinkling shell-casings) and the powerful impacts of the numerous handguns. Effects-steering was first rate. The musical soundtrack shone, too, with the Arcam letting you hear the contrast between the booming main club and the private room.

Next I spun the US remaster of *The Fifth Element*. This is another essential disc, in both image terms and the new Atmos mix. Pick any sequence and it totally engages. During the taxi cab chase, Bruce Willis' quippy dialogue sounded perfectly placed and balanced amidst a world of aural chaos.

Sicario offered reference-grade audio. The Arcam unwrapped its taut, atmospheric soundtrack with supreme accuracy and no shortage of power, giving everything from the pulsing score to a helicopter flypast depth, believability and clarity. When Agent Mercer descends into the cross-border drug-smuggling tunnel, the eventual firefight featured exquisite detail placement and sudden dynamic bursts.

I would have been intrigued how it could have sounded any better in DTS:X, frankly.

Switch Dirac off and you are at the mercy of your speakers and room acoustics. Bass response in particular sounded weaker, as if it had been muzzled, and the soundfield came across as less cohesive and balanced. It was still good – the AVR850 at its core has power and poise – but it was no comparison to the system with Dirac in play.

Scintillating upgrade

To sum up, if you need a Dolby Atmos/DTS:X AV receiver, and you want the best around, this is most probably it. Arcam has made a smart move teaming up with Dirac instead of less-potent EQ systems; and with its stunning Class G power amps, Arcam's sonic know-how and futureproofed HDMI stage, this is a scintillating home cinema upgrade.

There are two main drawbacks. Firstly, it's only a seven-channel design, so Atmos setups are very likely to require additional power amp(s). Mass-market brands will give you more channels in a single box. Secondly, its price means it'll be out of reach of many. Which, thinking about it, is a damn shame ■

SPECIFICATIONS

DOLBY ATMOS: Yes
DTS:X: Yes – via firmware upgrade
THX: No
MULTICHANNEL INPUT: Yes. 7.1 phono audio inputs
MULTICHANNEL PRE-OUT: Yes. 7.1 pre-outs, plus four Atmos channel pre-outs
MULTICHANNEL OUTPUT (CLAIMED): 7 x 100W (into 8 ohms)
MULTIROOM: Yes. Second AV zone
AV INPUTS: 6 x digital audio inputs (4 x coaxial, 2 x optical)
HDMI: Yes. 7 x inputs; 3 x outputs
COMPONENT VIDEO: No
VIDEO UPSCALING: No
WEIGHT: 16.7kg
FEATURES: Dirac Live for Arcam room EQ/setup; Ethernet; USB; 3.5mm input; 6 x stereo analogue audio inputs; networked media playback (incl. FLAC, MP3, WMA, WAV, AAC); DAB/FM tuner; internet radio; Class G amplifier design; twin subwoofer outputs; iOS control app; RS232; 2 x 12V triggers; 2 x IR inputs; learning remote control; Spotify Connect

HCC VERDICT



Arcam AVR850

→ £4,200 approx → www.arcam.co.uk
 → Tel: 01223 203200

HIGHS: Sonically immaculate; Dirac Live is excellent; classy design and build

LOWS: Uninspired interface; PC/MAC required for Dirac Live setup; only seven amplifier channels; DTS:X update still awaited

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Ed Selley is reminded that Q Acoustics isn't only interested in bookshelf speakers

Brit Concept aims high

FROM A LATE start (2006), Q Acoustics has become one of the major players in affordable loudspeakers. Its policy of using relatively conventional materials in well thought-out speaker designs has earned a lorry-load of awards and a large fanbase. But it's not content to focus only on the budget category...

On test here is the company's new Concept series in a 5.1 guise. This is Q Acoustics' flagship product. Although if you think that 'flagship' equates to rare metal drivers and designer cabinets, think again.

This is still, in loudspeaker terms, an affordable system (£1,750), predominantly because of the drivers used – there is no real difference between the ones employed here and those found in other Q Acoustics speakers that cost a good chunk less.

Rather than produce a 'clean sheet' design, the Concept is all about the cabinet. Gone is the fairly straightforward MDF affair of the 2000 series and in its place comes something more unusual. A Concept 'Gelcore' cabinet is assembled from two layers of MDF separated from one another by a resonance-cancelling compound. The result is a 'cabinet within a cabinet' and a very inert set of speakers that feel radically different to their cheaper brethren.

The range itself mirrors the more affordable models with the floorstanding Concept 40, standmount Concept 20 and the imaginatively titled Concept Centre. There is no Concept subwoofer. Q Acoustics is at pains to point out that a sub needs to be inert from the outset, and as such sticking an existing model in a Gelcore cabinet won't achieve a great deal other than increasing the price. To this end, this package is completed by the existing 2070Si model with its twin 6.5in drivers (mounted on the same baffle) powered by a 150W amplifier.

The Concepts are unmistakably Q Acoustics in design. The midbass drivers are doped paper; the tweeter are soft domes. But

the cabinets are more attractive and beautifully finished. Tap the sides and the speakers feel almost solid to the touch.

They are available in a black or white gloss finish (there are currently none of the walnut and leather options the brand offers elsewhere). The build quality seems extremely good. Overall, these are a triumph when it comes to aesthetics and pride-of-ownership.

An area where the Concepts differ from their siblings – and many rivals – is their mounting options. The Concept 20 has a dedicated stand available that uses a Gelcore column stabilised by a pair of glass outriggers. The Concept 40 also makes use of these outriggers, ensuring they are impressively stable but bulkier than you might expect. Even the Centre has a set of decent feet to give it a little isolation.

The speakers share some traits with other Q Acoustics models in that they are fairly relaxed about placement. They are all rear-ported but supplied bungs allow for use near a wall, and none of the speakers showed poor traits working in relatively confined spaces – possibly as a result of losing so little energy radiated via the cabinet. The Concepts also have fairly benign impedance and reasonable sensitivity that should ensure that they work well with a variety of AV receivers.

Old faithful

The idea of relying on a set of drivers notionally designed for a less expensive range of speakers might sound like a risky one, yet it works well here, with a few unexpected



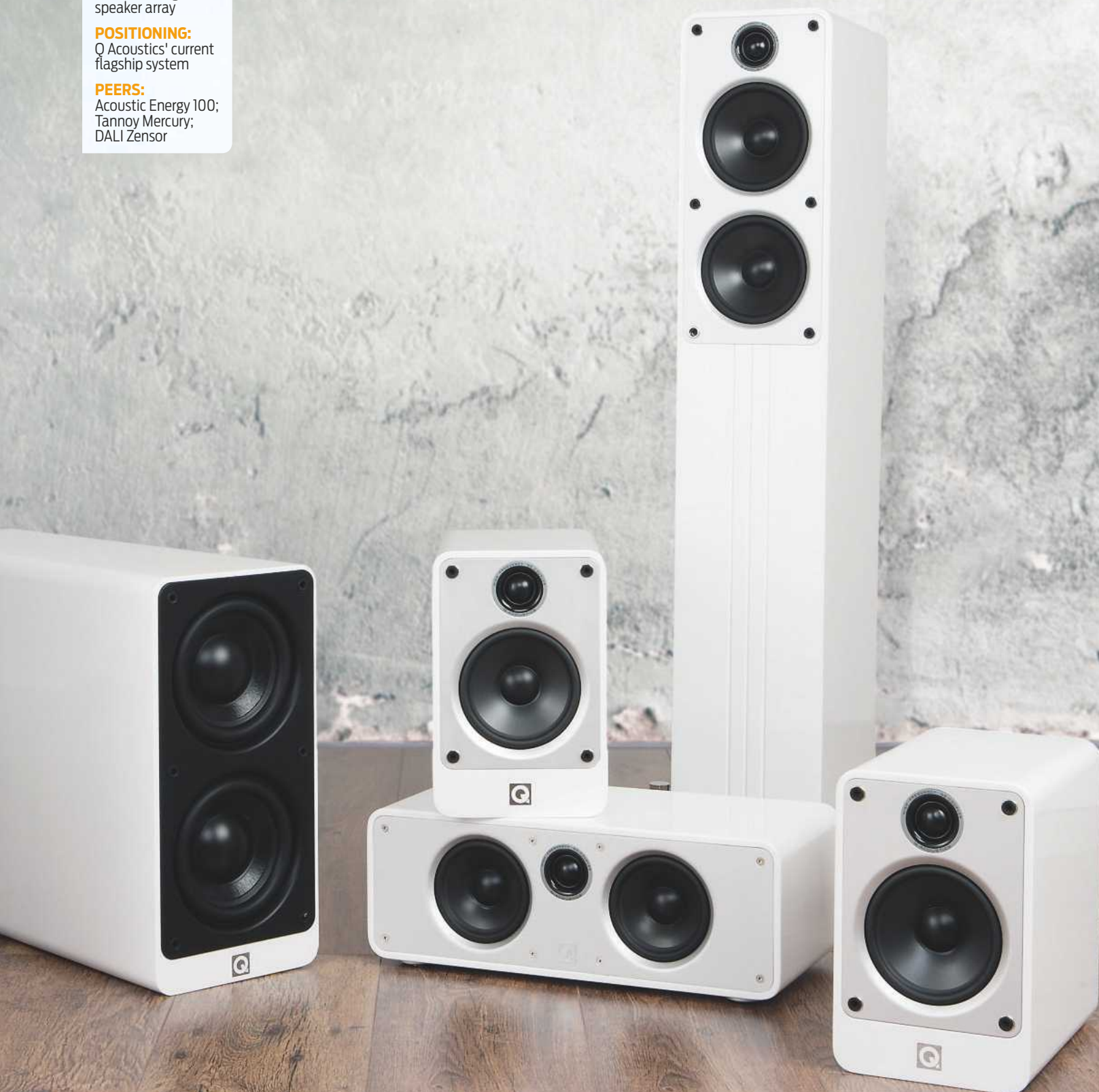
Q Acoustics' Concept speakers use new triple-layer Gelcore cabinets

AV INFO

PRODUCT:
Floorstanding 5.1
speaker array

POSITIONING:
Q Acoustics' current
flagship system

PEERS:
Acoustic Energy 100;
Tannoy Mercury;
DALI Zensor





The Cinema Pack partners the Concept speakers with a 2070Si sub

speakers – the floorstanders claim 90dB. Connected to a Yamaha RX-A3040, the speakers rarely needed more than -35 on the dial to sound healthily loud. And they are capable of being deafening if that's what you're after. More importantly, at lower volume levels they stay clear, detailed and able to deliver the same honest and open presentation. This means they have a real-world usability that can elude some rivals which struggle to deliver their best at less than 'event' levels.

These speakers are more than up to the task of working with less boisterous material

– vital, as we can't all be watching sci-fi blockbusters on a loop. The brooding cityscapes of drama flick *Nightcrawler* are rendered with the space and slightly ephemeral quality that the film demands. As before, when the soundmix needs impact, the Concepts can supply it instantaneously, but when delicacy is demanded, they excel at getting out of the way and letting the movie unspool. The only slightly discordant note is that the 2070Si subwoofer is less subtle than its passive brethren. It is still a staggeringly good woofer for the asking price (£280 if you buy separately) and has more low-end urge than you would expect from its twin 6.5in drivers, but it lacks some of the delicacy at low volumes that the rest of the array showcases.

Musically, the system is hard to fault. My partnership of Yamaha receiver and the Concept 40 floorstanders running without the subwoofer (hi-fi-style stereo) is genuinely listenable, with enough bass extension from the L/R pair in its own right. That same detailed and refined presentation that's apparent with Blu-rays is equally adept at drawing grins with a wide range of music.

Use the set for broadcast TV, and it's happy with everything from C4 drama *Deutschland '83* to kids' caper *Ben & Holly's Little Kingdom*. And, again, the sensitivity is especially useful for late-night or early morning playback. This is a set you can have on permanent use.

Classy concoction

What Q Acoustics has done with its Concept line is extremely welcome. By making the cabinets the main focus of development, it has rustled up classy, consistently neutral and cohesive speakers. The revised cabinets leave them better proportioned and altogether smarter than the speakers from which they evolved. And the really clever part is that they are no harder to drive and live with than their more affordable stablemates.

Great looks, great sound. Great job ■

benefits that might be of considerable help depending on your back-end components.

Most importantly, the Concepts never sound like cheap speakers in an expensive suit. Give them the well-mastered and lively *Jurassic World* Blu-ray and they unpick the detailed and spacious DTS-HD soundmix with aplomb. The initial escape of the *Indominus rex* is handled effectively, with the near-silent jungle suddenly becoming a mass of noise and fury as the creature finally appears. Little

'Great looks and great sound – Q Acoustics' Concepts unpick detailed soundmixes with aplomb'

details, such as the almost engine-like burble of the *Indominus* when it's searching for Chris Pratt's dino wrangler, are recreated with attention-piquing realism.

The Concepts locate effects correctly without being unduly directional; dispersion is impressive. And the soundstage across the front three channels in particular sounds seamless and three-dimensional. The two-and-a-half-way centre speaker isn't a weak link in the chain; dialogue remains clear and easy to follow, and LCR audio pans retain their body.

When reality intrudes into *Jurassic World*'s tapestry of CGI dinosaurs – regular noises such as shattering glass and thrumming park jeeps – such effects have scale and tangibility, and they combine with the more fanciful aspects of the soundtrack to create an impressively layered soundfield. Tonally, the sound here is neither unduly bright or dark.

One aspect of the Concept 5.1 Cinema Pack's performance that is especially beneficial is the relative sensitivity of the

SPECIFICATIONS

CONCEPT 40

DRIVE UNITS: 2 x 5in doped paper midbass drivers; 1 x 1in soft dome tweeter
ENCLOSURE: Rear-ported
FREQUENCY RESPONSE: 53Hz-22kHz
SENSITIVITY: 90dB
POWER HANDLING: 150W
DIMENSIONS: 170(w) x 972(h) x 288(d)mm
WEIGHT: 18.5kg

CONCEPT 20

DRIVE UNITS: 1 x 5in doped paper midbass driver; 1 x 1in soft dome tweeter
ENCLOSURE: Rear-ported
FREQUENCY RESPONSE: 64Hz-22kHz
SENSITIVITY: 86dB
POWER HANDLING: 75W
DIMENSIONS: 170(w) x 260(h) x 288(d)mm
WEIGHT: 12kg

CONCEPT CENTRE

DRIVE UNITS: 2 x 4in doped paper midbass drivers; 1 x 1in soft dome tweeter
ENCLOSURE: Rear-ported
FREQUENCY RESPONSE: 75Hz-22kHz
SENSITIVITY: 88dB
POWER HANDLING: 75W
DIMENSIONS: 430(w) x 150(h) x 198(d)mm
WEIGHT: 6.8kg

2070SI (SUBWOOFER)

DRIVE UNITS: 2 x 6.5in doped paper woofers
ENCLOSURE: Ported
FREQUENCY RESPONSE: Not given
ON BOARD POWER: 150W
REMOTE CONTROL: No
DIMENSIONS: 195(w) x 425(h) x 560(d)mm
WEIGHT: 14.6kg
CONNECTIONS: Stereo phono input

HCC VERDICT



Q Acoustics Concept 5.1 Cinema Pack
 → £1,750 approx → www.qacoustics.co.uk
 → Tel: 01279 501080

HIGHS: Expansive and open sound; neutral tone; excellent build and aesthetics; usefully sensitive; decent price
LOWS: Spiked stand arrangement a little bulky; sub not quite as impressively subtle

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

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JVC adds HDR to pseudo UHD for its latest projector. Does **Steve May** buy into the illusion?

Faux 4K filmshow

JVC'S CORPORATE ASSIMILATION into Kenwood may have put product development on hold for a year or two, but now the brand is back with the DLA-X5000, yet another upgrade to what is proving to be a surprisingly intransigent projector design.

JVC's handset design is as familiar as the PJ's chassis styling



This is the latest D-ILA beamer to assume entry-level mantle, but at £4,000 it's priced dramatically higher than the majority of rival 1080p products. Admittedly, it embraces 4K e-shift4 sleight-of-hand and trendy image processing, but that widening gulf will require some hefty justification by many potential buyers.

E-shift(y) technology involves crafty pixel manipulation to create an image with the same structural density as native 4K, but comes without the resolution benefit commonly associated with 2,160p content. To create a 3,840 x 2,160 canvas, each pixel is shifted diagonally by 0.5 pixels, thereby multiplying resolution to give an Ultra HD pixel count. Is it really 4K? No. But it's not exactly Full HD either.

The X5000 may look familiar but it introduces a new high-power 265W lamp able to cast a 1,700 lumens image, which is a 30 per cent improvement over its predecessor. As part of this increased light efficiency, JVC has yet again narrowed the gap between pixels on the D-ILA panels. Not only does this aid brightness, it has the added benefit of diminishing the pixel grid structure. Even if you park your La-Z-Boy slap bang in front of the screen, the picture looks delightfully cinematic.

One of the more interesting new enhancements promised by this model is compatibility with high dynamic range (HDR) sources. HDR will be a standard



AV INFO

PRODUCT: D-ILA projector with e-shift tech and HDR compatibility

POSITIONING: Entry level in JVC's current DLA range

PEERS: Epson EH-LS10000; Sony VPL-HW65ES



The X5000: JVC's most affordable projector



The projector uses side-mounted air vents

embellishment on 4K Ultra HD Blu-ray discs, and looks likely to be adopted by broadcasters and OTT streamers going forward. Proponents argue the benefits of HDR, even on SD content, are more evident than resolution to most viewers. So its inclusion here – a machine tailored at videophiles – makes perfect sense.

Clearly the extra brightness on tap helps facilitate HDR. To access the DLA-X5000 with such content, a test MP4 file was proffered. The artsy footage of a model roaming around with a digital camera to her eye would appear to present ample opportunity to showcase enhanced shadow detail, colour depth and neon highlights. However, if this file is anything to go by, the benefits of HDR on this e-shifter are subtle at best. While JVC offered some specific setup tweaks to maximise the HDR picture, the image just looked bleached and noisy. Personally, I doubt the veracity of this HDR test. Without HDR10 (Open HDR)-compliant software and an HDMI v2.0a delivery chain, any assessment of the projector's HDR chops is little more than a presumptuous observation.

Big, hefty beast

Cosmetically, the projector looks no different to previous incarnations. It's a big, hefty beast that you'll not be able to plonk onto a coffee table or casually ceiling mount. This is a home theatre display, and needs to be accommodated accordingly. On the plus side, it's available in either black or white.

The lens, centrally mounted, is flanked by air vents which run front to back. Hot air is expelled from the front. Connectivity, to the

rear, comprises two HDMI inputs, Ethernet (for network control only), a 12V trigger, RS232, and 3D Sync port for the (optional) Synchro Emitter required for use with active glasses.

Both HDMI inputs are HDCP 2.2-enabled and will accept various iterations of 4K content up to 2160/60p 4:4:4 – but, of course, once in the projector 2,160p sources are down-converted to 1080p. Beneath the hood you'll find a trio of 6th-generation 0.7in Full HD D-ILA panels.

The supplied remote control is a standard IR zapper, with backlit buttons. There's also rear-mounted controls on the PJ's chassis.

Positioned above this model in the JVC range are the DLA-X7000 and the

DLA-X9000. There is some functionality only available on these step-up siblings – here, you don't get Real Colour Imaging Technology, said to give a more nuanced image, or THX 3D certification. But I suspect buyers will not feel short-changed.

While the projector is active 3D compatible, glasses are optional. It should be pointed out that e-shift pixel multiplication is not used when in 3D mode. Don funny glasses and the projector remains unashamedly hi-def.

Setup is fast and straightforward. The X5000 features remote-controllable image zoom, lens shift and focus, and the throw is accommodating. At 3.31m you'll be able to project a picture 110in diagonally.



The HDMI inputs are 2.0a spec

Once up and running, it quickly becomes apparent just how bright this projector is. You can certainly use it in rooms with low levels of ambient light. General usability is average, though, with input-switching between the two HDMI inputs painfully slow. There's a pronounced pause and onscreen blackout.

Devil in the detail

To assess the projector with native 4K content, I hooked up a Sony 4K media player, which features a 4K Netflix client. The results were often spectacular – I could scarcely believe I was watching streamed content.

'Picture prowess of this D-ILA model is outstanding – it casts high-contrast images with rich colour'

The *Marco Polo* special *One Hundred Eyes*, which tells the origin story of the show's blind assassin, is a lavish watch. Black level, long a strength of JVC's D-ILA video-chuckers, is outstanding here. Images are gloriously contrasty: martial arts weaponry glints like jewellery as highlights ping. Dynamic contrast is claimed to be 400,000:1 and native is a still mightily impressive 40,000:1. There's a Clear Black feature adjustable between Low, High and Off but differences are subtle.

There's something majestic and theatrical about the DLA-X5000's imagery. Onscreen texture offers breathtaking detail. *Marco Polo* has outstanding costume design, which the projector relishes – wools, leather and fur appear three-dimensional. Are we missing resolution? Technically, yes, but you can still see every strand of Kublai Khan's wiry beard.

Multiple Pixel Control, part of JVC's proprietary Super Resolution technology, is an interesting feature, as it automatically sharpens key areas of the image while softening background detail. Just leave the mode to Auto and the onboard science sorts it all out. It's optional and fun to experiment with.

When Mongol riders crest the hill in pursuit of our fleeing hero, there's no dot crawl around their distant silhouetted shapes. The image is remarkably clean and precise. Yet while the projector's motion handling is good, I'm not entirely satisfied. Blur reduction is managed by JVC's Clear Motion Drive (CMD) and new Motion Enhance tech. Processing is largely benign, but my preference was always to keep things off or at the lowest setting. With CMD running at full pelt, maximum detail is retained during motion but there are clear artefacts around moving objects. I didn't care for it. Panning is super-smooth but a visual distraction. This may be

suitable for concert footage and TV studio material, but not movies.

JVC claims Motion Enhance optimizes the drive of the D-ILA device and is effective with both 4K and 3D images. In practice, I found it didn't have any significant impact on the image.

The X5000's user interface is a familiar box of tabbed options: Picture Adjust, Input Signal, Installation, Display Setup and Function settings. Available picture modes are a trio of presets (Natural, Cinema and Animation), plus six user definable pots – three of these can be addressed directly from the remote.

For those that want it, the PJ offers extensive adjustment. There's six-axis colour management and a 12-point manual gamma gauge. There are two different colour profiles – Standard and Video. Colour temperature is variable beyond the 6500K default, and there's a five-memory screen function. Screen adjustment even allows the user to tweak for colour differences which may be caused by different screen materials. Clever.

In the Advanced menu you'll find lamp control to toggle between Low and High settings. There's a noticeable increase in screen brightness and contrast if you opt for the latter, with an accompanying leap in fan noise – operating noise is relatively good otherwise, with the X5000 generating a consistent thrum easily masked by a separate sound system.

The Animation preset, labelled Anime on the IR zapper, beefs up the colour intensity, but not in a leery, noisy way. Colour temperature is automatically increased to 7500K, and it's very effective. Action anime series *Black Lagoon* (Netflix HD) is awash with deep reds (not orange, as you might see on a lesser LCD model) and vibrant blues. Even the Cinema mode, which on some products might see colour and brightness rolled back to the point of dullness, remains dynamic and engaging.

Room for one more

A pixel-shifting 1080p projector compatible with next-gen 4K content and HDR is, by 2016 standards, increasingly quite an odd duck. But I think there's still room for quasi-4K beamers like the DLA-X5000. Native UHD projectors are not going to get cheaper any time soon, and low-cost 1080p models just don't offer this level of image integrity or ingenuity.

All things considered, picture prowess of this D-ILA model is outstanding. This black box casts high-contrast images with rich colour and excellent detail; the sheer illusory appeal of e-shift4 processing is hard not to like. The projector also looks great straight from the box, and having both HDMI inputs HDCP 2.2-compatible is a boon, at least from a system integration point of view.

It's good to see JVC back in the game and widening the choice for bigscreen AV-holics ■

SPECIFICATIONS

3D: Yes. Active 3D (glasses optional)

4K: No. 1,920 x 1,080 image processing/3,840 x 2,160 pixels projected

CONNECTIONS: 2 x HDMI (v2.0a); RS232; 12V trigger; 3D Synchro port; Ethernet (for network control only)

BRIGHTNESS (CLAIMED): 1,700 lumens

CONTRAST (CLAIMED): Native 40,000:1; Dynamic 400,000:1

DIMENSIONS: 455(w) x 178.5(h) x 472(d)mm

WEIGHT: 15.4kg

FEATURES: D-ILA device; 265W ultra-high pressure mercury lamp; claimed average lamp life of 4,500 hours in Low mode; Natural, Cinema and Animation picture presets; Clear Motion Drive; Motion Enhance; 2.0x power zoom lens; 1.4-2.8:1 throw ratio; motorized zoom and focus; e-shift 4 technology with Multiple Pixel Control (MPC) image processor/analyser; HDCP 2.2 support; 4K/60p 4:4:4 input signal; five Lens Memory functions; colour management system; manual gamma adjustment; auto-calibration feature with additional optical sensor and JVC software

HCC VERDICT



JVC DLA-X5000

→ £4,000 approx → www.jvc.co.uk
→ Tel: 020 8450 3282

HIGHS: Contrasty, cinematic images; HDCP 2.2 and HDR support; well-judged image presets; plenty of calibration flexibility

LOWS: e-shift4 still isn't native 4K; not exactly lightweight; slow input response

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★



TRIGGER HAPPY
It's guns galore as Hollywood reboots *Hitman* on BD, p95

4K for the masses

Thought you'd need a grand for a quality 50in 4K TV? **John Archer** says Panasonic's TX-50CX680 means it's time to think again

AV INFO

PRODUCT:
Aggressively priced 50in 4K TV

POSITION:
One of the most affordable 4K TVs in Panasonic's range

PEERS:
Hisense LTDN50K321UWT; Philips 55PUT6400

PRICES OF 4K/UHD TVs are eroding so fast now it's hard to keep up. And it's not just the self-consciously budget brands that are involved in this 4K price stampede either; even Panasonic is getting in on the act with the TX-50CX680, a 50in 4K TV currently available for just £700.

The worry has to be, of course, that at this sort of price the 50CX680 only pays lip-service to its native 4K pixel count, and doesn't back it up with any other strengths. But nothing about the 50CX680's design and specs really supports this concern.

When it comes to picture technology, the model's 4K screen is a flat, VA-type LCD panel which, despite the set's tasty price, is still driven by Panasonic's Studio Master Colour technology. This means its 'Super Bright' panel is designed to deliver a wider colour gamut and more luminance than typical LCD displays. You also get a 200Hz-emulating motion reproduction

system – but not Panasonic's 4K Pro advanced image processing engine, or support for 3D and high dynamic range playback. The absence of the latter will disappoint those seeking the kind of premium UHD experience that, well, the new Ultra HD Premium badge has been designed to denote and incoming UHD Blu-rays will offer.

Minimalistic style

Aesthetically, the 50CX680 is neatly styled with its thin screen frame and minimalistic desktop stand. Its build quality is more plasticky than you'd expect from a more expensive TV, but you can't really tell this from a typical viewing distance.

Connections include three HDMI (all HDMI 2.0 and capable of playing 4K at 60 frames per second), three USBs for multimedia playback, and wired and Wi-Fi network options. Optical digital audio caters for soundbar and soundbase owners; a Scart



Love watching Netflix?
Then you'll love
Panasonic's handset

input caters for people still living in the 20th century.

The set incorporates Panasonic's walled garden of internet content and the Freeview Play catch-up TV service. The 4K versions of Netflix and Amazon are included in Panasonic's online 'world', while Freeview Play packages the UK's key VOD services into a superbly simple wrapper built around an electronic programme guide that can go back seven days as well as forwards.

'One of the most attractive arguments yet for thinking beyond HD when you buy your next flatscreen'

All of the 50CX680's smart features are handled, moreover, by Panasonic's excellent Firefox OS, which combines a rich graphical interface with a ruthlessly logical structure and plenty of straightforward customisability.

Play before your play

Panasonic still provides plenty of picture tweaks despite the 50CX680's affordability – and I would recommend familiarising yourself with some of these. Certainly, it's worth reducing the backlight from its default levels, turning off the noise reduction and ambient light sensor, making sure the contrast setting doesn't creep above its 80–83 level, and only setting the Adaptive Backlight feature – which controls a local dimming element of the screen's edge LED lighting array – to its low or, possibly, medium setting.

Follow these setup tips, though, and the 50CX680 rewards you with much more handsome 4K pictures than you might have expected for so little money. Where black level response is concerned, for instance, a well setup 50CX680 delivers dark scenes – like Morgan Freeman's first interview of Tom Cruise in sci-fi mind-bender *Oblivion* – with an effective mix of rich, deep but not hollow-looking black colours that are also surprisingly free of backlight clouding.

The Panasonic proves an unexpected hit in the colour department too. It's not as full-on vibrant as some rival – and more expensive – TVs around right now from Sony and Samsung in particular, but it certainly deserves acclaim for the expressive amount of subtlety with which it delivers even the smallest tonal variance and skin tone shift. The varied palette of *Life Of Pi* looks beautifully balanced and ultra-natural in tone; despite not having the brand's 4K Pro processing in its arsenal, the 50CX680 still manages to deliver on Panasonic's picture quality mantra of getting its TVs to deliver

pictures that look as close as possible to the established (in this case, non-HDR) video standards.

The set's pretty profound (but not class-leading) blackness is the basis of a generally impressive contrast performance. There's a healthy hit of brightness to peak details. Cruise's spotlight form in the Freeman interrogation scene looks punchy given the depth of the blacks around him, particularly considering this is a TV that's using an edge LED lighting array.

Time to recourse to my reference stockpile of 4K video sequences from World Cup football matches, tours of World Heritage sites and large-scale views across beautiful cityscapes. With these choice cuts, the Panasonic 50CX680 proves capable of bringing out plenty of 4K's impact in terms of detail, clarity and image depth – even though its 50in screen is no means huge by Ultra HD TV standards. Even detailed Full HD Blu-ray sequences, such as the ocean shots of *Life Of Pi*, still look at least part-way 4K without succumbing to noise or artifice. The performance of the screen's upscaling engine is assured rather than over-eager.

Lower-tier traits

While the flatscreen is mostly a roaring picture success, its affordability makes its presence felt in a couple of areas. Predictably, this lower-tier model exhibits motion weaknesses. Fast-moving scenes, in particular, can look a little uncomfortable; either slightly prone to processing glitches with Panasonic's motion processing in play, or a little affected by softness (which reduces the impact of the TV's native resolution) when the motion smoothing system is deactivated.

Also, even with the backlight setting restrained as suggested earlier, I noticed faint lighting 'blocks' appearing around very bright small objects that were set against a really dark background. Admittedly, these circumstances are more prevalent during my tortuous test sequences than everyday images.

Finally, the 50CX680's screen can prove a little reflective of bright objects in your room. A bit of furniture rearrangement might therefore be in order when you install.

However, none of these issues stop Panasonic's £700 flatscreen from presenting a compelling step-up in quality from truly budget 4K rivals like the recently-tested Hisense LTDN50K321UWT. In fact, by the time you've added an at-least solid audio system to its strong smart features and mostly excellent and certainly price-beating pictures, the 50CX680 is one of the most attractive arguments yet for thinking beyond HD when you buy your next TV. It may lack that on-trend HDR feature, but it hits its budget target with unerring accuracy ■

ON THE MENU



→ Even low-range Panasonic TVs are graced with the well-designed Firefox OS (aka My Home Screen 2.0) which allows for intuitive content finding and makes setup easy

SPECIFICATIONS

3D: No
4K: Yes, 3,840 x 2,160
TUNER: Yes, Freeview HD
CONNECTIONS: 3 x HDMI inputs; 3 x USB; Ethernet; Scart; component video input; optical digital audio output; headphone output; built-in Wi-Fi
SOUND: 2 x 10W
BRIGHTNESS (CLAIMED): N/A
CONTRAST RATIO (CLAIMED): N/A
DIMENSIONS (OFF STAND): 1,126(w) x 652(h) x 47(d)mm
WEIGHT (OFF STAND): 17kg
FEATURES: Studio Master Colour LCD panel design; pseudo 200Hz motion processing; local dimming; edge LED; Firefox OS; Dynamic, Normal, Cinema, True Cinema, Custom picture modes; Quad Core processor

HCC VERDICT



Panasonic TX-50CX680

→ £700 approx → www.panasonic.co.uk
 → Tel: 0844 844 3899

HIGHS: Value for money; solid all-round picture performance; Firefox OS still excellent
LOWS: No HDR or 3D support make it a step-down proposition; backlight occasionally shows clouding; motion could be better; not massively bright

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Tailored for telly addicts

Martin Pipe puts his feet up and watches endless re-runs of *Homes Under the Hammer* with Panasonic's DMR-HWT250 Freeview Play recorder



WE'VE COME A long way since first-gen PVRs whetted appetites for digital TV, EPG-driven HDD recording and chasing playback. All of these are within the scope of Panasonic's compact DMR-HWT250, but its twin Freeview tuners support HD broadcasts, DLNA-networked multimedia playback is allowed, and there's a range of smart features including catch-up TV.

The box supports Freeview Play. This system, similar to YouView, integrates broadcast and streamed catch-up TV. Go backwards on the EPG and shows that are available to stream can be accessed from there. Alternatively, a button on the handset calls up a list of catch-up services. At the time of writing, these are BBC iPlayer, ITV Player, 4oD, BBC News and BBC Sport. Demand 5 is scheduled to arrive at some point.

The PVR's 1TB of capacity equates to 260 hours or so of HD viewing, yet over 1,700 hours can be crammed in with appropriate configuration; recordings – HD and SD – can be recompressed in standby using a selection of modes borrowed from Panasonic's Blu-ray/DVD recorders. Quality can be traded for capacity. Basic editing facilities, like trimming, help you make the most of the storage.

Recordings are selected from a list (with programme details), as we've come to expect from PVRs. Other features include pausing live TV, HD-simulcast prompting, timer events and automatic series recording.

The DMR-HWT250 allows USB

storage devices, containing a wide variety of audio and visual formats (including 4K home video), to be plumbed in for playback. Some, but not all, of these files can be copied to the HDD.

Then there's Panasonic's TV Anywhere feature. Courtesy of this, recorded programmes (now including BBC fare, which wasn't the case when I reviewed the DMR-BWT655 BD player/PVR) can be streamed to Panasonic's Media Center Android/iOS app. Media Center, like YouView+, also lets you schedule recordings remotely. And the HWT250 boasts a DLNA server, so that programmes and multimedia content you've copied to internal storage can be viewed on networked devices. I streamed HD recordings to an A. C. Ryan multimedia player without any glitches.

You can't connect the unit to a DVD/BD recorder for archiving (it has no analogue outs), but recordings can be transferred to an external USB HDD, 'locked' to the PVR.

It's showtime!

Although the user interface can be a little sluggish at times, this time-shifter is no slouch in the performance stakes. It seems to share the step-up PWT655's visual 'engine'. HD broadcasts were clean with vivid colour. So too were movies; a C4 HD showing of *Oblivion* impressed; even in long-shot, you could make out details on the hydro-rigs, and the movie's frequent computer information-displays bristled with detail. HD YouTube and iPlayer fared well, too.

Standard-def TV can be excellent thanks to Panasonic's careful upscaling algorithms. Exaggerated edges can be tamed with manual tweaks in the picture settings menu.

Initially, I couldn't get 5.1 sound from appropriate HD broadcasts. TV showings of

SPECIFICATIONS

HDD: Yes. 1TB

TUNER: Yes. 2 x Freeview HD

CONNECTIONS: Aerial in/out; HDMI output; Ethernet; USB (rear and front); coaxial digital audio output; built-in Wi-Fi

DIMENSIONS: 300(w) x 52(h) x 190(d)mm

WEIGHT: 1.6kg

FEATURES: Freeview Play with retroactive EPG; Media Center app with 'TV Anywhere'; 4K networking/upscaling; Panasonic Diga portal (including support for BBC iPlayer, 'net radio, web browser, Amazon and Netflix); DLNA client/player and server; direct recording (DR) and 8 conversion modes (4 HD, 4 SD); series recording; pause live TV; 32-event timer; TV audio decoded (PCM) or transcoded to Dolby Digital; copy to HDD from SD/USB (with some restrictions); wide codec/format support (including FLAC/MP3/AAC/DivX/MPEG-2/MP4/MKV/AVCHD/JPEG/MPO); image sharing with Panasonic Lumix camera

HCC VERDICT

Panasonic DMR-HWT250

→ £200 approx → www.panasonic.co.uk

→ Tel: 0844 844 3899

HIGHS: Fine overall AV performance; Freeview Play makes catchup easy; excellent home networking skills

LOWS: No analogue connectivity; 5.1 PCM issue with review sample; bit of a plain design

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

AV INFO

PRODUCT: Freeview Play PVR

POSITIONING: Panasonic's top HDD recorder

PEERS: Humax FVP-4000T; Panasonic DMR-PWT655

Oblivion and *Running Man* were heard with two-channel audio. I had to switch the Panasonic from PCM (i.e. internally decoded) audio output to its Dolby Digital transcode mode. Everything now worked, although an unnecessary stage was being applied. Oddly, the PWT655 gave me no such problems.

Still, *Oblivion*'s soundtrack bristled with energy, and the musical score was delivered with punch and rhythmic flow.

In most respects the PWT250 is a worthy PVR contender. It's design is a bit nondescript, and it's not cutting-edge in terms of control or system smarts, but it does what it needs to do very well ■



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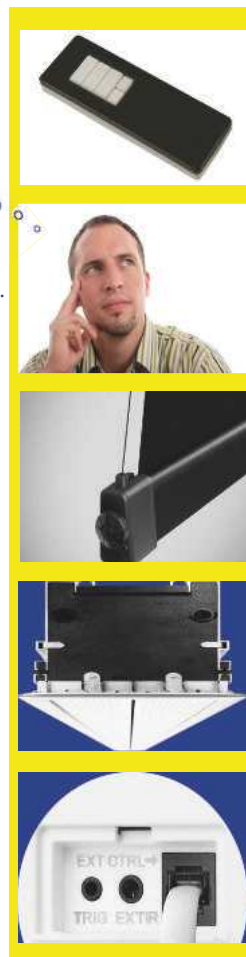
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BenQ goes for gold by sticking to standards

BenQ's new projector has a remarkable feature set considering its £800 price, and wants to save you time when it comes to image adjustment. **John Archer** looks for the catch

AV INFO

PRODUCT:
Sub-£1,000
single-chip Full HD
DLP PJ

POSITION:
Around the middle
of BenQ's latest
projection range

PEERS:
Optoma HD28DSE;
Epson EH-TW6600

WHILE A GROWING number of today's so-called home entertainment projectors are actually presentation PJs masquerading as movie machines, the BenQ W2000 is the real home cinema McCoy – despite its attractive £800 ticket.

Its living room rather than board room credentials are clear as soon as you look at it. Yes, it's slightly larger than many projectors in its price bracket, but it's more attractively shaped than most business models and even features a bit of bling in the form of a gold front panel that sits nicely – if a tad ostentatiously – against the glossy white of the unit's other edges.

Connections comprise two HDMI's, a D-Sub PC port, an RS-232C port for system integration, a 12V trigger jack, mini and standard USB sockets, and even a 3.5mm audio loopthrough in recognition of the W2000's built-in speaker system.

The USBs don't support data playback. Yet while one is only for service use, the other can attach an optional Wireless Full HD Kit so you can transmit HD pictures and sound from your sources to the W2000 cable-free. It's worth adding that one of the HDMI's supports the MHL protocol for projecting content stored on your mobile phone.

BenQ's bright star?

Picture specifications are promising. The 2,000 lumens of brightness is fairly typical for sub-£1,000 projectors these days, but it's not nearly so common to find this allied to a claimed contrast ratio as high as the W2000's 15,000:1.

Where things really get interesting, though, is with BenQ's new 'Cinematic Color' feature. This uses a specially angled colour wheel, with a newly designed coating, to deliver what BenQ claims is accurate support for the

BenQ even extends the W2000's gold trim to its rear panel

industry's REC.709 video standard right out of the box. And BenQ's engineers check the REC.709 calibration at three different stages in the production of every unit; this isn't just some computer-generated 'more or less' calibration claim.

The fact that the colour wheel is a six-segment (RGBRGB), six-speed design bodes well, as it should limit the potential for single-chip DLP's 'rainbow effect' to spoil the fun.

'Detail levels are particularly excellent, digging out every last pixel in *Exodus...*'s gorgeous Blu-ray'

Despite this pre-calibration ethos, the W2000 features a good suite of colour and white balance management tools, and is endorsed by the Imaging Science Foundation (ISF). Getting the PJ installed within your room is aided by a decent 1.3x zoom, vertical lens shift (plus horizontal and vertical digital keystone correction) and a 12V trigger. And the menu system has been designed not to complicate home cinema novices, too.

Hitting a home run

I kicked off my tests with the Cinema (REC.709) preset BenQ hopes will woo home cinema fans. And right off the bat it really does deliver a natural, well-balanced image. I still tweaked it a touch, with marginal brightness and contrast increases and nudging down its gamma to its 2.1 level to bring out a bit more shadow detail. But this counts as a minimal amount of work before pictures look good. And for the most part that is an adequate description of the W2000's imagery. Detail levels are particularly excellent, pulling out every last pixel of information and every last colour tone nuance from the largescale Egyptian crowd scenes in the gorgeous Blu-ray of Ridley Scott's *Exodus: Gods And Kings*.

DLP's micro-mirror approach means this sharpness is delivered, moreover, without the image suffering so much as a hint of visible

pixel structure, even over tricky areas like the expanses of blue skies and golden sand that often fill large chunks of *Exodus...*'s frames.

The impression of copious detail also owes a large debt to the superb balance the W2000 achieves between colour tones. There are no major problems with colour banding or blocking, and it's a relief to find that despite the W2000's pictures being winningly bright they don't suffer much at all with DLP's colour striping issue – even when torches flicker against the night sky.

The projector falls a little short with its black level response, though. Dark sequences appear both greyer and less rich in shadow intricacies than I was hoping for, based on relatively high-spec BenQ projectors of the past. So in *Exodus*, I found myself being distracted during Moses' night-time chats with the big man upstairs when I should have been utterly immersed.

This less-than-stellar black level could be enough of an issue to put off home cinema fans who have taken care to black-out their movie room. Although the W2000's ability to still be watchable in a slightly more 'relaxed' light environment courtesy of its innate brightness may win it a different type of fanbase.

Keep on moving

Large-scale action scenes, such as the battle near the beginning of Scott's historical romp and the crossing of the Red Sea, enjoy natural-looking motion (important as there's no frame interpolation feature to call upon). More good news concerns the W2000's input lag – which comes in below 40ms and so shouldn't heavily impact your video gaming performance – and impressively little noise from its built-in cooling fans. Even the speaker system (2 x 10W) is better than the puny efforts usually found inside projectors; the sound is expansive, open and rounded, and capable of projecting far enough away from the chassis to sound as if it's coming from at least somewhere in the vicinity of the images it's supposed to be accompanying.

Overall the W2000 is another class home cinema projection act from BenQ. It's not quite a perfect one because of its black level foibles, but there's enough talent here to satisfy your bigscreen urges ■

SPECIFICATIONS

3D: Yes. Active (but no glasses provided)

4K: No. 1,920 x 1,080 (Full HD)

CONNECTIONS: 2 x HDMI inputs (one with MHL support); RS-232 port; D-Sub PC port; 2 x USB; optional Wireless HD streaming kit; component video input; audio input; audio output

BRIGHTNESS (CLAIMED): 2,000 lumens

CONTRAST (CLAIMED): 15,000:1

DIMENSIONS: 380.5(w) x 121.7(h) x 277(d)mm

WEIGHT: 3.6kg

FEATURES: Cinematic Color pre-calibration; ISF support; colour management options; six-speed, six-segment colour wheel; vertical image shift; onboard speaker system (CineMaster Audio); 1.3x zoom; 1.15-1.5:1 throw ratio (100in image possible at approx 2.5m); horizontal and vertical keystone correction; setup wizard; wall colour correction for non-screen owners; 6,000-hour lamp life (SmartEco mode); 2 x IR receivers; 12V trigger; 27dB claimed operating noise

HCC VERDICT



BenQ W2000

→ £800 approx → www.benq.co.uk

→ Tel: 0870 850 4417

HIGHS: Impressive imagery right out of the box; excellent sharpness and detail; it runs quietly; installation flexibility

LOWS: Black levels could be better; dark scenes can lack a little shadow detail

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★



Sony reimagines a home-theatre-in-a-box system for the 2010s. **Mark Craven** appreciates the ripped-up rulebook



Breaking the bar

THE IDEA OF a soundbar accompanied by surround speakers and a subwoofer is a bit of an odd one. The huge success of soundbars has been based on people's distaste for multiple boxes – those who fell out of love with all-in-one systems. Now the clutter is piling up again. I, for one, couldn't be happier.

Sony's £500 RT5 system imitates last year's Philips Fidelio B5 by offering not just a soundbar and subwoofer, but surround speakers too. Yet while Philips chose to have the surrounds battery-powered (charged by attachment to the main 'bar'), Sony's additional cabinets plug into your mains. Okay, so this means they aren't technically wireless, but the important thing to consider here is that there's no speaker cable to feed around skirting boards or under rugs.

The soundbar is a lean-back design, with its drivers (there are left, right and centre channels here) hiding behind a black cloth grille. The styling and shape means it's successful at not drawing attention to itself, and the overall length provides a decent

cosmetic match to a 55in/65in TV. It'd look a bit unruly with a 42in screen, though.

The subwoofer is a bit less distinguished, as it majors on gloss black plastic. Front-ported its 6.25in woofer means you can place it close to a wall, though. Like the surrounds, it connects wirelessly to the soundbar, with nothing in the way of setup required.

As for the 'extra' speakers, these are of a decent size and promise to do more than just pay lip-service to multichannel sound. They stand vertically, with a front-mounted LED glowing red or green to illustrate whether they're in use. A switch at the rear turns them on or off.

The soundbar houses all the system's connections. There's USB and Ethernet (plus Wi-Fi) for file playback and online sources, as well as three HDMI inputs and an ARC output. The HDMI's are 4K capable and I was able to passthrough HDCP 2.2-protected footage from BT's Ultra HD sport channel.

Connect the RT5 soundbar to your TV via HDMI and there's an onscreen user interface. This greets with a panel-based home screen

AV INFO

PRODUCT: 5.1 soundbar system

POSITIONING: Sony's only genuine 5.1 'bar' proposition, yet below the standard HT-RT9 in the pecking order

PEERS: Philips Fidelio B5; Sonos Playbar



The HT-RT5 adds a sub and wireless surrounds to its three-channel 'bar'

displaying sources – HDMI inputs, Bluetooth, USB, etc. It's reasonably good-looking but a bit utilitarian.

As with Sony's previous XT3 soundbase, you'll need to access this menu so you can go into the setup sub-menus. So while the bar can be fed from your TV via a digital optical output, HDMI is the way to go.

There are usability flaws to report. The manual is fairly sparse, and it took me time to get to grips with the various soundfields on offer. Normally, I'm not that concerned with the minutiae of what soundbar presets are attempting to deliver as I tend to ignore most of them, but with these extra speakers in play it becomes important.

If you're inputting a multichannel soundmix, you want to make sure that's what you're getting rather than some matrixed confection. So go with the ClearVoice+ mode which outputs the inputted signal. If you're running



stereo, but want to use those extra channels, this will also do the job. In fact, seemingly every soundfield made use of the surrounds, even Standard when given a stereo signal.

After some experimentation, I discovered there is actually a two-channel stereo mode, which switches off the subwoofer and centre channel, but it can only be selected from the UI (rather than the handset). It's for music purists, I suppose. In practice, it doesn't sound very good – maybe that's why it's hidden away.

On the road again

Mad Max: Fury Road has a clanking, snarling Dolby Atmos soundtrack, and with the RT5 outputting the core TrueHD mix through its 5.1 speaker battalion, it retains much of its charms. During her escape from Immortan Joe, Furiosa's truck is assailed from all angles. There's a real sense of an effects maelstrom in evidence here, with spears and arrows

whipping through the air. In truth, it's not the smoothest, most enveloping soundfield I've ever heard – the surrounds don't have the scale or wide dispersion to really encase you – but in the enjoyability stakes it still knocks regular 2.1 into a cocked hat.

High frequencies come across as a little soft and indistinct, limiting some of the edge-of-your seat impact that George Miller's road-racer can offer, but it's not a weak performance by any means. And there's enough midrange punch to ensure that Furiosa's airhorn cuts through the melee with impressive body, while dialogue, given a *bona fide* centre channel, is well-presented. An AV sync feature is on-hand to correct any latency issues.

As expected from a system of this ilk, the subwoofer is vital. There's a direct level adjustment on the handset that allows easy tweaks of its level from 0-12 – set it to around >

'With *Mad Max* there's a real effects maelstrom in evidence – spears and arrows whip through the air'



The L/R channels get separate mid-range and tweeter units

9 or 10 and it holds your attention with juicy bass thuds that bring cinematic drama to proceedings. It's not an LFE behemoth, but it's not prone to rattling cabinet tantrums either.

Sicario's brooding score and considered sound design shows the RT5 can build an atmosphere, too, and a helicopter flypast in Chapter 4 provides a decent test of Sony's Cinema Studio 9ch mode, which has nine-channel (front height and rear surround) aspirations. Comparisons with the standard 5.1 presentation do actually show an increased

'The Sony HT-RT5 sounds good, with some impressive DSP to play with – I enjoyed having it around'

sense of height cooked up by Sony's DSP – the chopper seems to have more of an in-room presence. Yet later on in the movie, when Josh Brolin's black ops team becomes engaged in a firefight, I found the Cinema mode took some of the fizz away from the sound steering.

Other soundfield modes are Movie, Music, Game and Music Arena. The last of these is quite pronounced, adding reverb and a tangible midrange boost to proceedings. Yet ClearVoice+ again was my preferred option, as it took some of the rough edges off low-bitrate music streams. That said, with the different demands of music, the RT5 is less of a hit overall. Listening critically, I felt the timing

wasn't quite locked down, leading to tracks – particularly up-tempo rockers such as The Rolling Stones' *Rocks Off* – sounding a tad unrhythmical. It fared better with a less-frantic DTS-HD MA 5.1 recording of Joe Bonamassa (*An Acoustic Evening At The Vienna Opera House*), with his acoustic guitar sounding nicely balanced against the percussion section.

Atmos around the corner

Counting against the HT-RT5 are some future arrivals from Samsung and Philips that feature upfiring Atmos drivers and decoding of the next-gen format. Having embraced the idea of a breakout soundbar, wouldn't you want to go the whole hog? So while cutting-edge in one regard, the RT5 is in danger of looking a touch old-fashioned.

Another consideration is that having these extra speakers brings in a level of system setup that soundbars aren't known for. Owners of a standard model can place it below a TV and go and put the kettle on. To get the very best from the RT5's 5.1-channel charms, careful placement of the rears is required, particularly as they are quite narrow in their output. There's a basic calibration procedure on offer here, with a dinky boomerang-esque mic that plugs into the bar's rear, but it got through the test tone analysis so quickly I doubt the effectiveness of its subsequent tweaks.

Counting in this package's favour, though, is its welcome simplicity. All you need do is plug in a BD deck and link it to your TV and you're set for 5.1 cinema sound. And while it doesn't sound consistently brilliant, it still sounds good, with some impressive DSP to play with. Overall, it's fun, and I enjoyed having it around ■

As well as Ethernet, the RT5 offers Wi-Fi and Bluetooth connections



SPECIFICATIONS

DRIVE UNITS: 3 x midrange drivers; 2 x tweeters (soundbar); 2 x full-range drivers (surround speakers)
AMPLIFICATION (CLAIMED): 550W
CONNECTIONS: Optical digital audio input; 3 x HDMI inputs; 1 x HDMI (ARC) output; 3.5mm audio input; Ethernet; built-in Wi-Fi; USB
DOLBY TRUEHD/DTS-HD MA: Yes/Yes
SEPARATE SUB: Yes
REMOTE CONTROL: Yes
DIMENSIONS (SOUNDBAR): 1,080(w) x 560(d) x 128(h)mm
WEIGHT (SOUNDBAR): 3.8kg
ALSO FEATURING: ClearAudio+, Game, Movie, Music, Standard, Music Arena and Cinema Studio 9ch modes; Google Cast and Spotify Connect streaming; auto-calibration via supplied microphone; Bluetooth (transmit/receive); wireless subwoofer connection; wireless surround speaker connection; DLNA media playback

HCC VERDICT



Sony HT-RT5

→ £500 approx → www.sony.co.uk
 → Tel: 0845 6000 124

HIGHS: 5.1 with little fuss; DSP modes worth using; fun, involving multichannel audio; media playback capabilities; accommodating design
LOWS: Operation isn't always plain-sailing; not a replacement for a dedicated music system

Performance ★★★★★
Design ★★★★★
Features ★★★★★
Overall ★★★★★

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The first OLED bargain?

LG's keenly-priced 55in TV proves once and for all that OLED technology has mainstream potential, reckons **John Archer**

EASY AS IT is to love the picture quality OLED technology can deliver, it's so far been much less easy to love the price tags attached to OLED TVs. Finally, though, LG is tackling this price 'barrier' with sets like the 55EG920V: a 55in 4K-resolution model that costs £2,250. But has LG compromised this OLED TV's performance and features to arrive at such a price?

Its design shows a couple of signs of (not literal) corner-cutting: the desktop stand isn't as beautifully finished as the ones you'll find with LG's more expensive EF950V and EG960V OLED sets. It doesn't feature the same Harman/Kardon speaker system you get with those more expensive models either.

That said, the 55EG920V is still gorgeous. It's barely 5mm deep, its screen curves gently and elegantly back towards its centre, and the bezel is so thin you barely notice it.

It's a smart cookie, too, using the second generation of LG's brilliant WebOS operating system and offering online services including the 4K versions of Netflix and Amazon, plus the BBC iPlayer and Demand 5. There's no All 4 or ITV Hub. Freeview Play support has been announced for LG's next generation of TVs, but it's not clear yet if it can or will be added to the 55EG920V. Connectivity includes

three (not four) HDMI inputs.

OLED excitement

The performance of this step-down LG is undeniably exciting. As usual with OLED, black levels in particular are phenomenal. The darkness of shots of space in *Gravity* and *Interstellar* looks

incredibly intense, rich and deep with no trace of the greyness you always get to some extent with LCD technology. These blacks also avoid any inconsistency and clouding.

However, the EG920V showcases similar traits to the EF950V reviewed previously. Occasionally, with very bright shots, the image dims slightly as it stretches towards the screen's edges. And during dark scenes a sudden infusion of brightness can make the usually brilliant black levels suddenly jump into greyness.

Those galactic demo sequences prove the screen can deliver bags of subtle detail and points of light that are every bit as impactful as the darkness around them. Stars twinkle as if you're actually looking at a night sky, and don't bleed at all into the surrounding murk. Such light precision isn't possible with LCD.

There's a rich colour palette in evidence here, too. Couple this with the high contrast and you get a sense of a dynamic picture, and one that smooths over the fact that this OLED TV can't deliver the same levels of brightness that its top-end LCD rivals can. In fact, the 55EG920V does a mostly good job of handling high dynamic range (HDR) content. There's a palpable sense of an extended colour and brightness punch built atop OLED's peerless blacks. Again, some TVs make HDR look brighter, though.

Motion reproduction is solid, 4K material offers detail and clarity, and the screen's



SPECIFICATIONS

3D: Yes. Passive
4K: Yes. 3,840 x 2,160
TUNER: Yes. Freeview HD
CONNECTIONS: 3 x HDMI inputs; 3 x USB; component video input; optical digital audio output; PC audio input; Ethernet; built-in Wi-Fi
SOUND: 2 x 10W
BRIGHTNESS (CLAIMED): N/A
CONTRAST RATIO (CLAIMED): N/A
DIMENSIONS (OFF STAND): 1,225(w) x 719(h) x 48.9(d)mm
WEIGHT (OFF STAND): 12.6kg
FEATURES: USB multimedia playback; DLNA media streaming; 4K upscaling engine; OLED brightness adjustment; Triple XD engine; WebOS 2.0 smart platform with Amazon and Netflix 4K; RS-232C control; picture modes including Vivid, Photo, Standard, Eco, Cinema and Game; time-shift to external hard drive; MiraCast screen sharing

HCC VERDICT

LG 55EG920V

→ £2,250 approx → www.lg.com/uk

→ Tel: 0844 847 5454

HIGHS: Frequently jaw-dropping picture quality; spectacular design; good value for OLED; slick, enjoyable user experience

LOWS: Some 'vignetting' in very bright scenes; occasional black level 'drop out'; pretty uninspiring audio

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

passive 3D playback serves up an excellent sense of depth and space while suffering minimal flaws. In short, there are (many) times where the 55EG920V's pictures are a home cinema dream come true.

Audio is noticeably weaker than that of LG's Harman/Kardon-equipped OLEDs, and the curved screen can distort reflections. These issues makes the flat EF950V series more attractive if you can afford one. If you can't, however, the 55EG920V is a worthy addition to the red-hot 55in TV market – and one that should have the LCD brands quaking a little in their boots ■

AV INFO

PRODUCT: 55in 4K curved OLED TV with HDR support

POSITION: LG's most affordable 4K OLED TV yet

PEERS: LG 55EF950V; Samsung UE55JS9000

Amazon Prime Music

Mark Craven balances the merits of this bolt-on streaming platform against its catalogue woes

PRIME MUSIC IS a free part of Amazon's Prime service bundle, which includes on-demand access to a wealth of TV programming and movies (including 4K content), plus free next-day delivery on millions of Amazon purchases, cloud photo storage and a few other treats. A Prime sub is £79 a year, or less than £7 a month. It's very good value, but if you sign up, is Prime Music strong enough to have you cancelling your existing Spotify, Tidal or Apple Music sub?



Curated playlists are part of the Prime deal

songs for free, more if you pay a fee); digital versions of any music purchased via Amazon over the years are freely incorporated; it's ad-free; and playlists, recommendations and offline access are all supported.

Prime subscribers should therefore check it out, but treat it very much as a bonus feature rather than a killer app until Amazon can hammer out more content licensing deals ■

What, no Civil War?

The answer, sadly, is probably not. It just doesn't have the content chops. Some absentees (AC/DC, Led Zeppelin) can be expected, but others are plain weird. An example? Guns N' Roses once launched two albums on the same label on the same day. Yet only one of these (*Use Your Illusion I*) is

available to stream; US alternative group The Flaming Lips have a lengthy catalogue, yet only two albums are on Prime Music. I kept hitting these stumbling blocks. Other services have much greater content choice.

Away from this it has things that appeal. The desktop app and smartphone controller are good; you can import your own music (250

HCC VERDICT

Amazon Prime Music → £Free with Prime sub

Overall ★★★★★

www.lindy.co.uk → £60 approx

Lindy BTS-360

This portable speaker might be better off with The Archers than Anthrax, says **Mark Craven**

THERE ARE ALREADY – at a guess – 3,729 Bluetooth speakers you can buy, but that hasn't stopped Lindy adding the BTS-360 to the pile.

As the name suggests, this near-budget offering aims to deliver an omnidirectional soundfield from its reflex-loaded top-firing driver.

The speaker stands vertically. Around the front is a Bluetooth button to initiate pairing, plus an NFC logo pointing you to the top of the BTS-360 – device-touch pairing can be achieved by tapping your 'phone to the speaker's red-cloth top.

Rear connections are a MicroUSB port (for charging), plus a 3.5mm

jack for external devices. There's no volume control (or any EQ adjustment) offered – the BTS-360 is at the mercy of your source.

Battery life is rated at 18 hours continuous use, and the speaker's small dimensions – it's approx 12cm tall – and light weight make it nice and portable.

Skimming the surface

Performance is adequate, but not up to the standards of some rivals, as the BTS-360 never digs deep into the subtleties of your music collection. There's a

modicum of bass, but it lacks punch, and there's a dearth of real clarity to the mids and highs. Plus it's prone to distortion if you push it to its limits.

With that in mind, I'd suggest it has a sound signature that is perhaps better suited to radio – Lindy's cutesy speaker is more happy burbling away on the kitchen counter than tackling your music needs.

The neat design and simplistic operation – plus the price – make the BTS-360 a fair proposition, but I rate Sony's SRS-X11 a better bet for budget desktop/portable speaker buyers ■



The speaker features a top-firing full-range driver

HCC VERDICT

Lindy BTS-360 → £60

Overall ★★★★★

Dressed to impress

In the affordable soundbar arena, Roth's Bar 2LX stands out courtesy of its attractive design and slender subwoofer. But can it handle **Danny Phillips'** dino-action demands?



ROTH HAS CARVED out a nice niche for itself as a purveyor of sensibly priced soundbars, and the Bar 2LX is another wallet-friendly offering to follow 2013's Sub Zero II. This no-frills affair is designed to improve TV sound without fuss or clutter. The feature list extends to a wireless subwoofer and aptX Bluetooth streaming.

Roth has done a fine job of hiding the Bar 2LX's budget build quality with some sleek styling. The front is covered in tasteful black cloth, bisected by a vertical silver strip.

At 50mm high, the soundbar should duck under most remote sensors when placed on a TV stand, or you can mount it to a wall using the supplied brackets. There's no display panel. Tiny coloured lights tell you what source is selected. Adjust the volume and the light blinks, then stops when it reaches maximum or minimum. It's basic stuff.

This simplicity continues on the rear panel. There are optical digital audio and stereo analogue inputs but no HDMI.

AV INFO

PRODUCT:

Affordable soundbar and subwoofer pack

POSITION:

Joins the HDMI-equipped Sub Zero III in Roth's soundbar stable

PEERS:

JBL Boost TV; Wharfedale Vista 150

The wireless sub is one of the smallest I've encountered (a tad over 15cm wide), and is easy to place.

Inside the 'bar are four full-range drivers, which team up with the sub to deliver a claimed 120W of power. There's no Dolby or DTS decoding, or EQ modes to play with.

Dinosaur dramatics

With expectations low, I spun *Jurassic World* (BD) and, despite some obvious shortcomings, I was pleasantly surprised by the Bar 2LX's energy and volume. It injects the soundtrack with decent snap and vigour, making the *Indominus rex's* roar bigger and more menacing than through a TV's speakers. That's the bare minimum you should expect from a soundbar, of course.

Pterodactyls swoop through the park's main street and the Roth handles the chaos enthusiastically. The panicked screams of the crowd are nicely spread across the front of the room – even without any width-expanding tech on board – while smashed glass and screeching dino-birds are clearly projected.

You can pick out individual effects and there's some suggestion of detail, although the 'bar lacks treble finesse and subtlety. Of greater concern is an occasional touch of stridency during busy scenes, which made me think twice before turning up the volume.

Bass is weightier than you might imagine, lending a sense of depth to the movie's score. The sub rarely sounds boomy. But when a scene calls for huge, floorboard-shaking bass, it inevitably falls short.

The Bar 2LX is better with TV shows, thanks to the forthright tone that makes dialogue audible over the bustle of a busy living room. It's a serviceable music player, too, offering a nicely balanced and direct sound.

Overall, this is a classic case of getting what you pay for – the £150 price tag is ridiculously tempting and styling is tidy, but the trade-off is a sparse feature list and moderate sonics ■

SPECIFICATIONS

DRIVE UNITS: 4 x full-range drivers

AMPLIFICATION: 120W

CONNECTIONS: Optical digital audio input; stereo analogue input

DOLBY TRUEHD/DTS-HD MA: No/No

SEPARATE SUB: Yes

REMOTE CONTROL: Yes

DIMENSIONS: 940(w) x 50(h) x 75(d)mm

WEIGHT: N/A

FEATURES: aptX Bluetooth streaming; wall-mounting with supplied brackets; wireless subwoofer connection; 30Hz-20kHz claimed frequency response

HCC VERDICT

Roth Bar 2LX

→ £150 approx → www.rothaudio.co.uk

→ Tel: 01753 682782

HIGHS: Attractive design; simple setup and operation; compact subwoofer; snappy, energetic sound

LOWS: Bass output doesn't do justice to big movie scenes; plasticky build; no EQ; hard midrange

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

One For All Smart Control

Anyone hunting for a bargain-priced universal remote should look here, says **Adrian Justins**

THE ONE FOR All Smart Control (also known by the model code URC 7980) is an affordable universal control solution. It doesn't offer the slickest experience, but you may consider its £40 ticket a far better option than using numerous handsets for system control.

The physical remote is nice and light and although rather tall is reasonably well laid out with low-profile buttons that let you feed the remote easily through your hand to lay your thumb on the right key. The lack of a backlight hampers the process of quickly finding some keys, though.

The zapper is supported by a companion app that streamlines setup. Here you can select brand names and model numbers for up to eight devices (TV, PVR, BD deck, amp, DVD deck, games console, media player and soundbar). Don't know the model number?



The handset features five one-touch macro buttons

Simply try a series of basic commands until it works.

Old-school operation

But what if you haven't got a smartphone? There's an alternative, which is to use the remote's 'Magic Key' to initiate a similar process and select from pre-programmed shortcuts. All methods worked quickly and easily for me, but I did grow tired of having to re-pair the handset and smartphone via a flaky Bluetooth connection. Any missing features can be assigned by IR learning from your original remote to one of three spare buttons.

The smart app can help you locate the handset by making it emit a loud beep

but its contribution ends there and it doesn't let you construct multi-device activities. Thankfully, doing so manually isn't too much of a hassle. There are five activities, including watching TV and watching a movie, that let you assign your preferred devices. Multiple commands (eg. switch on a TV, select HDMI 1, turn on Blu-ray, press 'Select') can likewise be created and saved as macros.

The One For All Smart Control keeps things simple, but is proof that sometimes this approach pays dividends. This is a good-value system add-on ■

HCC VERDICT

One For All Smart Control → £40 approx

Overall ★★★★★

www.crystallaudio.com → £50 approx

Crystal Acoustics WiDaptor

Danny Phillips auditions an alternative to shelling out on a brand-new multiroom system

SETTING UP A multiroom speaker system from scratch can be a costly business, yet Crystal Acoustics has a clever cash-saving alternative to a full install from the likes of Sonos, Samsung or HEOS by Denon.

The company's £50-a-pop WiDaptor connects to any stereo system with an analogue input and streams music from Spotify and DLNA/UPnP devices over its built-in Wi-Fi connection.

You'll obviously need a WiDaptor for each system you want to include. Then, using Crystal's WiSound app, you can send music to each adaptor individually or group a few together by dragging and dropping them in the app's Device List.

It also talks to Crystal's Cuby and Teevy speakers, which can even re-transmit Bluetooth audio to the WiDaptor.

Other nifty surprises include AirPlay support, music playback via USB, a 3.5mm minijack input and access to a vast database



The WiDaptor is small enough to tuck behind your gear

of free music supplied by TTPod, a Chinese competitor to Spotify.

The app that's not quite 'OK'...

The app currently offers Spotify, TuneIn radio and iHeartRadio but Tidal and Deezer are 'coming soon'. It's a versatile affair with a helpful layout and quick operation, but it's glitchy at times and would only load albums from my NAS drive up to the letter 'K'. Odd.

Played through a selection of systems both old and new, the WiDaptor delivers a nicely balanced sound that's fine for day-to-day listening around the house. It probably won't stand up to close scrutiny on an expensive reference system – particularly if you're playing low-bitrate MP3s and Spotify streams – but it does a good job for the price.

The WiDaptor is therefore a terrific problem solver if multiroom speakers are beyond your budget. The app needs a little work, though ■

HCC VERDICT

Crystal Acoustics WiDaptor → £50 approx

Overall ★★★★★

WIN

A Q ACOUSTICS 7000i 5.1 SPEAKER PACKAGE

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BRITISH SPEAKER BRAND Q Acoustics is leading the way when it comes to stylish, great-sounding 5.1 speaker packages and in this month's competition we're giving you the possibility to get your hands on one, the 7000i Cinema Pack.

This award-winning system, which retails for £900 approx, makes a perfect partner to a bigscreen TV or projector screen to create a genuine home cinema experience. So make sure you enter before the deadline and good luck!

Speakers, assemble!

The system comprises five of the 7000i satellite speakers, joined by the 7070Si subwoofer. The former are sleek-looking pill-shaped aluminium enclosures (one horizontally aligned for centre channel duty) that pack two midrange drivers and a single ring radiator tweeter, with

swivel feet allowing them to be either placed on a flat surface or wall-mounted. For a freestanding setup, the satellites can also be mounted on Q Acoustics' optional 7000i speaker stands.

The slender, vertical-standing subwoofer employs a potent 150W Class D amplifier to drive its 8in high-excursion driver. And this bass box can also be wall-mounted using an optional bracket.

Build quality and styling throughout the Q Acoustics package is excellent – these are speakers that you'll want to have pride of place in your cinema.

So how does the array sound? Pleasingly, the 7000i Cinema Pack exhibits all the traits that have won Q Acoustics so many fans. The performance is all about smoothness and control when required, seamless pans courtesy of the use of identical drivers around the soundfield and an absorbing surround sound performance. Feed it the bass-heavy insanity of, say, *Pacific Rim* and it takes it all in its stride, balancing the LFE bombast with sweet effects detailing and authoritative dialogue handling. The subwoofer integrates beautifully with the satellites, bolstering them without ever dominating the performance.

And the 7000i Cinema Pack makes for a great music-playback system too, both in multichannel and stereo mode. Q Acoustics has real hi-fi heritage and it shows through here.

The package is available in either gloss white or gloss black finishes – and our competition winner will be able to select the option that best suits their movie room. So what are you waiting for? ■

The system is
available in gloss
white, too



For more info about
Q Acoustics' home
cinema products visit
www.qacoustics.co.uk





Be in with a chance of winning Q Acoustics' 7000i Cinema Pack by answering the following film-related teaser:

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1. The first entry drawn at random will win the prize. **2.** Only one entry per person/household; multiple entries will be discarded. **3.** Entrants from the UK only. **4.** Employees of MyTimeMedia Ltd and companies supplying competition prizes are not eligible to enter this competition. **5.** Please ensure your personal details are correct, as they will be used to contact you if you win. **6.** No alternatives, cash or otherwise, will be offered to the winner as prizes. **7.** The editor's decision is final. **8.** Comp winners' info available upon request. **9.** The closing date for entries is March 24, 2016.

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DIGITAL COPY

Having 'superfast' broadband worthy of the name means **Mark Craven** is able to enjoy BT's Ultra HD channel, 4K Netflix and more. But he knows he's one of the lucky ones

BEYOND ALL THE rights deals, compliant hardware, giant servers and subscription fees, there's one thing that makes streaming TV and movie content possible, and it's your internet connection.

Broadband hookups have given impetus to the streaming revolution. However, even in our era of superfast broadband, there are issues at play that may limit exactly what can be accomplished.

We've lived in this era for some time now, of course, but the parameters keep on changing. It was ten years ago that telecoms industry watchdog Ofcom and BT agreed to open up the latter's UK infrastructure to third-party companies, thereby kickstarting a competitive broadband market. And with that, speeds have increased. Cast your mind back to 2006, a time when Take That were reforming and the Blu-ray vs HD DVD war was at full-throttle. What wasn't full-throttle was your 'net connection – according to Ofcom, the average UK headline (e.g. best possible) speed was 3.6Mbps. Try streaming *Jessica Jones* on that in 4K.

Skip forward and **has the UK's average broadband speed gone supersonic? Sort of.** The latest available data I could find from Ofcom shows that average UK speeds (again 'headline' rates) have hit around 23Mbps. But there's devil in the detail. While around a third of households can enjoy speeds described as 'up to' 30Mbps (and usually higher), many others are forced to chug along at less than 10Mbps. And there's a divide between urban and rural areas, although this isn't always clear cut. I live in the sticks and enjoy a stable 72Mbps connection.

As it stands now, the situation isn't good enough. Luckily, our government realises this, and is aiming for 24Mbps for 95 per cent of the UK by 2017.

Whether or not it succeeds is a different matter. And, frankly, even faster speeds would be welcome.

Need for speed

The speed of your broadband – or lack of it – makes a massive difference if you're an AV enthusiast. More so, in fact, than ever before. Why? Because 'net-delivered services are currently where you need to go to access 4K content. Netflix, Amazon Instant and BT's Ultra HD sport channel are all internet-exclusive. Ultra HD Blu-ray will rectify this, but it's not here yet. Satellite 4K is nascent technology, too.

And not just any broadband connection will do if you want to shunt 2160p content down your pipe. Netflix recommends a 25Mbps download speed for its Ultra HD streams; Amazon suggests 15Mbps. BT (because it wants to ensure other users in your household can still get online) requires a 44Mbps connection for subscribers to its Ultra HD offering.

Basically, 4K streamers need an above average 'net connection. Furthermore, you have to pay for the privilege. Netflix may market itself as offering UHD TV for only £8.99 a month, but your broadband sub is going to be at least double that. BT Infinity 2 even more. You'll use that fast connection for more than just binge-watching, of course.

So along with speed we need cheaper prices. A home cinema fan wanting access to top-tier content in 2016 is faced with a huge monthly bill, once streaming subs and broadband fee are combined, even before Blu-ray purchases are considered. It's almost enough to make me hanker for the glory days of DVD, analogue channels and dial-up internet. Almost ■

Is your broadband speed hampering your AV ambitions? Let us know: email letters@homecinemachoice.com

Mark Craven has fond memories of playing *Quake* online in 1997 over dial-up, even though this makes him feel very, very old indeed





FILM FANATIC

Anton van Beek checks out a trio of those mysterious films that you've never heard of before, but which still end up riding high in supermarket DVD and Blu-ray sales charts...

WHAT DO ZERO-BUDGET fright flicks, British gangster films and Nic Cage all have in common? Give up? Well, at the time of writing they can all be found clogging up the DVD/Blu-ray charts of your local supermarket. And they aren't just filling the lower rungs of the charts either, they're occupying prime positions between mountaineering dramas and Tom Cruise's latest action epic.

Don't go thinking that this has only happened due to a lack of high-profile blockbuster releases post-Christmas. Month in, month out, even the most dedicated film fan will find themselves confronted with myriad direct-to-DVD (or as near) movies they've never heard of before during their weekly shop. Few of these titles have ever made it into the pages of *HCC*, because we figure there are other releases you'd rather read about. But in an attempt at redressing the balance I decided to take the plunge and watch three such films. Call it suffering for my art.

Perps, priests and politics

First up was *Rise of the Footsoldier Part 2*. This is part of the movie-related cottage industry that has grown up around the 1995 Rottendon murders (other examples being *Essex Boys*, *Bonded by Blood* and *The Fall of the Essex Boys*), and purports to continue the true story of football hooligan-turned-gangster Carlton Leach. From what I could gather from this sequel, the original ended with Leach being elsewhere while his best mate was off becoming a victim in the notorious murder case.

Rise of the Footsoldier Part 2 finds him wallowing in guilt for not having been present when his friend was killed (at one point he even visits the scene of the crime and stares wistfully at a rainbow). He's then not present when his new best mate is knifed

in a fight in a strip club. Unless you've got a thing for bad acting, gangster clichés and obligatory cameos by Steven Berkoff, there's really not much here to get excited about. However, the climax leaves things open for yet another sequel, and **I must admit to being genuinely intrigued to learn which dramatic event Leach won't be present for next time around.**

On to *The Vatican Tapes*, a horror that, despite the title, turned out not to be yet another 'found footage' film. It also stars some actors you may remember, including Dougray Scott, Michael Peña and Djimon Hounsou. And if that wasn't enough, it's directed by Mark Neveldine of Neveldine/Taylor fame (the brains behind *Crank* and its sequel). Sadly, it's another run-through of exorcism and possession clichés that can't even scare up some decent chills, let alone new ideas. I can only assume that Taylor was the one who brought the energy and ideas to that directing partnership.

Finally, we have *The Runner*, the latest in a growing list of Nic Cage movies that have gone straight to a supermarket shelf near you (see also Cage as a 12th Century bandit in *Outcast* and Cage dealing with the rapture in *Left Behind*). So, what zany delights did *The Runner* have to offer? In a word: none. Despite the explosion that features prominently on the sleeve, it's actually a dull political drama about a Louisiana congressman (Cage) who finds his private life coming under intense scrutiny after he speaks out about an oil catastrophe. Casting Nic Cage in a serious role? No wonder he looks so bemused on the cover.

What to learn from this tedious triple-bill?

Next time you're in Tesco, stick to buying potatoes ■

Have you ever uncovered a cinematic gem at your supermarket? Let us know: email letters@homecinemachoice.com

Anton van Beek is beginning to think that if HMV and Blockbuster had also sold groceries, they wouldn't have both fallen into administration



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IN THE MIX

Post-production expert **Jon Thompson** discovers another boutique Blu-ray label that's picking up the titles ignored by major studios and bringing them to a BD spinner near you

I KEEP BEING told physical media is dead and that streaming is not just the future, but it's the here and now. In some respects that statement is right – just look at how many people have swapped a DVD collection for a Netflix sub. Yet in other ways that statement could not be more wrong.

How so? Well, I recently realised an old colleague of mine from Warner Bros had started a boutique Blu-ray label. That would, of course, be madness if physical media was dead. But it isn't – and in the limited edition market it's very much alive and well.

The label is Twilight Time, founded by Brian Jamieson and Nick Redman. Both have extensive experience in the home video sphere; Brian formally looking after special editions at Warner and Nick working in licencing at 20th Century Fox. They first met when Brian was supervising the restoration of Sam Peckinpah's *The Wild Bunch* (Brian produced the Oscar-nominated documentary about the film).

The USP of Twilight Time is simple – making a limited US run (3,000 to 5,000 copies, which is what most studios will produce just as review platters...) of a title. Buyers snap them up, obeying the old get-'em-while-they're-hot rule, because when they sell out that's it, they're gone. Wolfgang Petersen's 1980s sci-fi *Enemy Mine* is a classic example. **Search online for this sold-out Twilight Time title and you'll be asked for as much as \$200.** The same applies to the original *Fright Night* with Roddy McDowall.

The films released by the label are eclectic and seem a bit random, until you realise these are the films that Brian and Nick want to watch, which is why the Merchant Ivory classic *Remains of the Day* is in the same batch as Ken Loach's *Carla's Song*, and a Twilight Time collector will likely end up with *Journey to the Center of the Earth*,

Steel Magnolias, *Christine*, *Sleepless in Seattle* and *Sexy Beast* on their disc shelf.

Doing the format justice

One of my favourite movies – *First Men in The Moon* – is a Twilight Time release, so I had to pick it up. I was struck by the quality of the master the company had sourced. Nick is adamant that unless it has a good master they won't release a title. The quality has to do the Blu-ray format justice.

Twilight Time is based in Los Angeles, but a lot of its discs find themselves overseas – The Cinema Store in Covent Garden, for instance, carries a lot of the titles. The good thing is all but one of its Blu-rays are not region-coded. Of course, the company's exclusivity deals are US-based – you may find some of the catalogue offered in other territories thanks to the vagaries of international rights.

As Nick pointed out when I spoke to him, unlike LaserDisc, where the replication cost was prohibitive, to press a Blu-ray is a pittance. The actual box, printed cover and shrink wrapping are some of the most expensive parts of production. 'The key is the buy-in from the studio. 3,000 copies for them are uneconomical, but to a boutique company 1,500 is break even.' Most of Brian and Nick's picks are turning a profit. This means they can continue to raid the archives to fill our need for high-quality copies of our old favourites.

The next time someone tells you physical media is dead, you can tell them it's no such thing. We are now enjoying some classic titles that we dreamed of watching again but thought were simply too eccentric for a Blu-ray release. These two guys in Hollywood are as eccentric as you and I. ■

What's the most you've ever spent on a Blu-ray?
Let us know: email letters@homecinemachoice.com

Jon Thompson can usually be found traipsing through Soho screening rooms clutching his much-loved Blu-ray copy of *Sleepless in Seattle*



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Pioneer vs Oppo?

I'd like some advice from you, if possible. I have a collection of DVDs and want to get the most out of it. I'm projecting on a 118in screen with a 1080p projector.

At the moment I have the Sony BDP-S790, which is better than my Samsung F7500 in terms of DVD playback. However, I've been thinking about the Pioneer BDP-LX58 and whether it is better than the Oppo BDP-103 for DVD playback? I ask this because here in Portugal I can get it for €500 but the Oppo is €800. And I've read great things about the Pioneer when it comes to noise reduction, plus general picture and sound. Will this Pioneer be the ultimate choice for DVD

playback? Or are better players out there?

António, Portugal

Steve May replies: The DVD upscaling (and Blu-ray upscaling to 4K, come to mention it) of the BDP-LX58 is very good. In fact, as you suggest, it's a cracking all-round AV machine that I'd

easily recommend, even though I found it a bit buggy when it came to network operations (something that Pioneer may have since resolved with firmware updates).

I assume the Oppo you are referring to is the BDP-103D, which features onboard Darbee Visual Presence (DVP)

Pioneer's BDP-LX58: a disc diva

processing. This introduces a different option for when watching DVDs (or BDs). DVP works to add a greater sense of depth to an image, and is very effective. However, whether you'll want to actually use it is another matter.



★ STAR LETTER...

Why are there not more upfiring speakers?

I have a few questions that I hope you might answer. The new UHD Blu-ray specification appears to have missed an opportunity by failing to deliver UHD 3D, since the combination of passive glasses with beyond-HD resolution video might have been a match made in heaven. I know interest in 3D has rapidly gone off the boil, but that opportunity might have gone some way to reinvigorate the market. Anyway, first question!

Since 3D in Full HD is in the new Blu-ray specification, and the discs will have a larger capacity than standard Blu-ray, does this mean I will finally get to watch *Gravity* in 3D with an Atmos soundtrack at home?

There are three major players in the new 3D surround sound market: Dolby Atmos, DTS:X, and Auro-3D. Given that Dolby and

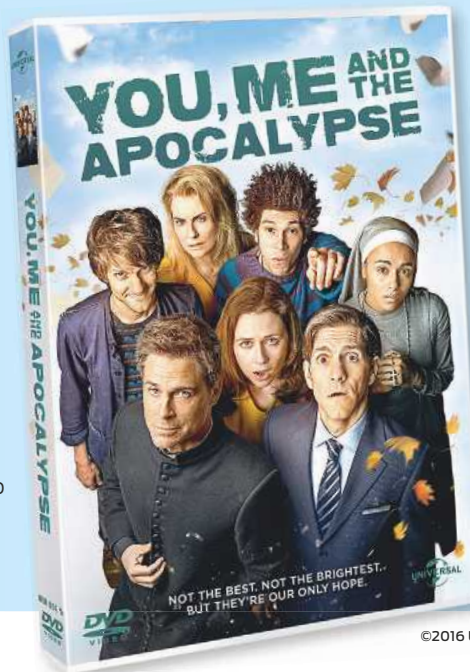
DTS are the established leaders in this area, I can't see much room for Auro-3D to take hold. Atmos appears to be preferred on the early AV receivers we have seen, and most of the cinema releases and disc encodes. DTS is struggling to catch up, but is now making an appearance either as a feature or firmware upgrade. Auro-3D is largely absent, other than on a few high-end amps, or as a paid upgrade. If there are no cinema releases in this format, and our equipment won't support it, then is there any point to Auro-3D, and will it ever gain traction in this market?

My final question relates to the hardware required for 3D surround and specifically 'height'. There are loads of

in-ceiling speakers around, but for most people upfiring speakers are a much better option. Cutting holes in the ceiling and re-wiring is not an

option for me (and most people I suspect). In my small living area with fairly low ceiling (along with the majority of people who don't enjoy a dedicated home cinema room), a reflective spread of sound is a better choice anyway. So, my final question is why are there so few upfiring speakers around?

Manufacturers have been aware of Dolby Atmos for years now. Technically, it's not that difficult to make such a speaker (a speaker that points up with a notch filter). Yet in this country, I seem to be limited to entry-level quality Onkyo speakers, or KEF R50 models which sound great but are £600 a pop! And, that's only one pair... What are all the other speaker



I haven't done a direct comparison of the DVD upscaling prowess of the BDP-LX58 and the Oppo BDP-103D, so suggest if you really need a definitive answer that you try and find a dealer who can do a demo. That said, if I were in your shoes I'd be tempted to keep €300 and go for the Pioneer.

Is this Android box dodgy?

Hello. I have recently been offered an Android TV box. It appears capable of limitless film downloads as well as music, plus every sporting event under the sun! The person demonstrated this by showing *The Revenant*, which has just been in cinemas. I have been assured these boxes are legal, but the whole thing looks a bit dodgy to me. What are your thoughts?

John Ellison, via email

Mark Craven replies: There's nothing inherently illegal about Android TV boxes (of which there are various options, include the WeTek we reviewed last year and the recent Nvidia Shield), but what the person was doing when he/she demo'd



it is. Some of these boxes are being sold pre-loaded with shifty software allowing torrents of all manner of content. My advice would be to steer clear – if you want to watch *The Revenant*, wait for the Blu-ray!

HDR humbug

I wish to thank you for ruining my Christmas. In November I purchased a Samsung 4K 48in

7000 Series TV which we greatly enjoy. In deciding whether to purchase the TV I had considered OLED but reviews indicated there are still some issues with it. Then I read your review of the Samsung HDR TV, so should I have waited?

Ah well, that will teach me for rushing and only taking six months to decide on the TV...
James Nicholson

Mark Craven replies: Um, Happy New Year, James. Presumably the review you read was of the 65in Samsung JS9500 in our yearbook issue (HCC #256). This is a much more expensive proposition than the 48in 7000 Series model that you bought, and was actually available at the same time – we first featured it in HCC #246.

If you wanted an HDR TV – but, I imagine, at a 48in/50in size and for much less than the JS9500's original £6,000 ticket – then, yes, you should have waited. But you'll be waiting for a good while yet as HDR technology matures and prices and screen sizes drop.

As you say, you greatly enjoy the Samsung 7000 that you purchased. Carry on enjoying it and don't worry about HDR for the time being!

The films come first!

Hi. I loved Anton van Beek's article in #256 of your great magazine. I completely agree with him. I love blockbusters as well – they make my system look and sound great – but let us not forget that there are plenty of great films out there that are small and independent and just as entertaining. And I think that Anton is very lucky; most of the films I love are not even on Blu-ray, let alone scheduled for Ultra HD Blu-ray. Correct me if I am wrong but I am sure that *The Arrival of Wang*, >

manufacturers doing? Forget getting a tonal match for your other speakers, unless you have an array of KEF R models.
Simon, London

Mark Craven replies: That *Gravity* exists on Blu-ray in two different guises – one with a 3D encode, the other with a Dolby Atmos mix – is a source of irritation. Despite fans of the sci-fi drama likely to have bought the initial 3D version, and then the Atmos-armed Deluxe Edition, I'm sure you're not alone in wanting to experience both at once and would pay out again for the privilege. Why this hasn't been offered is unknown, but I'd suggest you're more likely to find such a version appearing on a future standalone BD release than squirrelled away on any UHD Blu-ray (not that

Gravity has been confirmed for the next-gen format) even with the extra space theoretically available.

On to Auro-3D: as I said in the last issue, it's a format that seems to be bubbling away in the background and causing a few raised eyebrows among AV hedz. And until there is more than one BD available with an Auro-3D mix, I wouldn't let it affect your system setup/AV receiver considerations. Those who have it love it's upmixing skills, though.

As for upfiring speakers. There are other options than those from KEF and Onkyo, although we haven't been able to test them yet – these include models from Definitive Technology, Klipsch and Atlantic Technology (all US brands). And speaker marque PSB is launching some models soon.

When you ask what the other speaker manufacturers are doing, the answer is a) making and selling successful hi-fi speakers, and b) waiting to see how the Atmos market grows. When there are companies that still struggle to produce a centre channel to join their floorstanders, it's easy to see why reflective speakers are slow to arrive!

Star letter-writer Simon grabs the first season of the hit comedy drama series *You, Me and the Apocalypse* on DVD. Following the exploits of an eclectic cast of characters sheltering in a bunker beneath the town of Slough following the news that a comet will collide with the Earth, *You, Me and the Apocalypse* is available to buy on DVD from February 29, courtesy of Universal Pictures Home Entertainment.



We're still waiting for Wang to arrive on BD...

Anton van Beek replies: Blu-ray continually surprises me. The fact that the new *Mad Max* movie looks incredible on Blu-ray is a given. The fact that, for instance, Arrow Video puts that much effort into a horror flick like *The Mutilator* is something I think should be celebrated.

Although *The Arrival of Wang*, *Fathers of Girls*, *Morris: A Life with Bells On* and *Faintheart* (I'm guessing you're referring to the 2008 Brit comedy starring Eddie Marsan) have all been released on DVD on these shores, you are quite correct in believing that the chance of them ever seeing the light of day on Blu-ray is virtually non-existent. While the first two of those titles were released by labels (Peccadillo Pictures and Soda Pictures, respectively) who have flirted with Blu-ray in the past, it tends to be the exception rather than the rule. As for the other films, the rights to *Morris*:

Fathers Of Girls, *Morris: A Life With Bells On* and *Faintheart*, to name but a few, are only out on DVD. So to me DVD playback is very important.

And if I feel like watching *Song Of The South* then VHS is my only choice as this film has never even been realised on DVD.

VHS and DVD are still very important things to have. I am not interested in upgrading to 4K just yet. After all, the films come first! David Fox, via email

A Life with Bells On appear to lie with Safecracker Pictures, a distributor that seems to have zero interest in Blu-ray, while *Fathers of Girls* was released by Contender, which was acquired by E1 Entertainment back in 2007. And as that UK mini-major can't even be bothered to give last year's acclaimed British/Irish horror flick *The Hallow* a UK hi-def release to accompany the DVD this March, then I wouldn't bother holding your breath.

As for that House of Mouse classic *Song of the South*, the controversy that still surrounds the film pretty much ensures that a DVD or Blu-ray release remains as likely as a Disney-sanctioned outing for Marv Newland's *Bambi Meets Godzilla*.

Avengers FAIL!

Hello folks. I've been a reader of your fine mag from the very beginning. I've written to you on a couple of occasions and you've always been really helpful and informative. Which leads me to

ask, and please forgive me if I'm not the brightest spark in the home cinema universe, about Blu-ray Audio discs. I know movies are region-coded but are Blu-ray Audio discs the same? I'm keen to find out because I'd love to add a few of these to my collection.

And last but not least, the absolute disaster audio soundtrack that has befallen the *Avengers: Age of Ultron* Blu-ray. It's got to be the biggest mess and the biggest disappointment in a blockbuster film release, ever. Has there been any talk whatsoever about getting the disc either recalled or at least reproduced with a properly-mastered soundtrack? I'd also be grateful if you could confirm if the American Region A release is just as bad. By the way, I love the readers' home cinema installs and the professional install articles – always fascinating to see what's possible on different budgets. And long live 3D discs, I love em! Keep up the good work folks. Terry Wells, via email

Win! Great Blu-rays up for grabs

Just email your answer to Competitions@homecinemachoice.com to be in with a chance



Game of Thrones: The Complete Fifth Season

The latest season of the hit fantasy TV show arrives on BD and DVD on March 14, courtesy of HBO Home Entertainment. To celebrate we've got five copies of the

Game of Thrones: The Complete Fifth Season Blu-ray boxset to give away.

Question:

Actor Nikolaj Coster-Waldau plays which character in *Game of Thrones*?

Answer:

A) Tyrion Lannister **B)** Jaime Lannister
C) Cersei Lannister

Email your answer with '*Game of Thrones 6*' as the subject heading – and don't forget to include your postal address!



Sicario

Emily Blunt, Josh Brolin and Benicio del Toro star in this morally murky look into the volatile world of Mexican drug cartels. *Sicario* is available now on Blu-ray, DVD and digital platforms

and thanks to Lionsgate Home Entertainment, we've got five Blu-rays to dish out!

Question:

Sicario director Denis Villeneuve has signed on to direct the sequel to which '80s sci-fi film?

Answer:

A) Cocoon **B)** E.T. the Extra-Terrestrial
C) Blade Runner

Email your answer with '*Sicario*' as the subject heading – and don't forget to include your postal address!



Deathgasm

The perfect film for fright fans and metal-hedz, this outrageous horror-comedy explodes onto DVD and Zavvi-exclusive Blu-ray on February 29 courtesy of

StudioCanal. To be in with the chance of winning one of five *Deathgasm* BDs, simply answer the following correctly...

Question:

Which of the following is the name of a genuine heavy metal band?

Answer:

A) Blind Cheetah **B)** Def Leppard
C) Mute Lion

Email your answer with '*Deathgasm*' as the subject heading – and don't forget to include your postal address!

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Avatar: Still causing 3D arguments in 2016

Anton van Beek replies: As far as I'm aware Walt Disney Home Entertainment has yet to even acknowledge that there is a problem with the *Avengers: Age of Ultron* Blu-ray's audio mix, so the chance of ever seeing a 'corrected' version grows less with every passing day. Should the film get an Ultra HD Blu-ray review, it'll be interesting to see if it goes for a Dolby Atmos mix and how this compares technically to the regular Blu-ray's DTS-HD MA 7.1 track.

And Universal Music's Pure Audio Blu-rays are, to the best of my knowledge, region-free.

I want holographic TV!

Can I say how much I hate the whole 3D thing? Yes, I was kind of impressed with *Avatar* but 3D is basically a succession of 2D pictures given depth, kind of like those old Victorian lantern shows. Also, if you look at the edge of the screen you lose the illusion totally. And don't get me started on the glasses. I think the way forward is 4K, these pictures have tangible depth and are almost holographic. I can't wait for when holographic surround vision is a reality and I get to see an X-Wing dogfight just above my ear holes and imperial stormtroopers marching down the aisle of my local multiplex! Dave, Watford

3D ruins human drama

Anton van Beek, in the ongoing controversy about 3D, asked for further views.

First of all, big stores, such as John Lewis or Currys, no longer display any 3D, clearly showing it is not a selling point. The main point about 3D, either cinema or TV, is that it has some use with spectacular movies full of special effects, such as *Star Wars*, *Jurassic Park*, *Avatar* etc (though these are still spectacular in 2D). However, for the vast majority of TV or cinema output, it is human drama which predominates. For all of this, 3D would be a real distraction and even intrusion. Can anybody imagine *Coronation Street* in 3D?

One has to remember that even an old movie such as David Lean's *Brief Encounter* was filmed in 4:3 black-and-white, and remains a classic. Content is, after all, what matters. 3D will remain a kind of side show, and 4K is taking its place, and TV is a picture, not life. Our brains create the reality. Roger Payne, via email

Mark Craven replies: Dave and Roger – I think I'm on your side when it comes to 3D. Certainly, the usefulness (or rather impact) of the format – personally speaking – is suited to epic blockbuster movies. I tried watching football in 3D (a few

years ago now) and found it a distraction. Screen size is also really important – the best 3D experiences I have had have all been with projection systems.

And I have other 3D niggles. My outing to watch *Star Wars: The Force Awakens* was almost ruined by being in a stupidly hot auditorium and ending up with smeary, sweaty fingerprints on my 3D spex. Not that the movie looked great in 3D, either...

Can I pick my panel?

Hi, with CES over, now's the time to hunt for a new TV! Looking at the new Samsung KS9500 series, I find there seems to be a major minefield in the panel situation. How do you make sure you are getting a Samsung TS01 panel (is this correct?) and not an inferior one?

When placing an order for the TV should you state Samsung TS01 panel required? Also when receiving the TV can you check this in the service menu? Brian Langford, via email

Vincent Teoh replies: As far as I'm aware, top-tier Samsung TV models have always been spared from the panel lottery scenario you described, based on my own testing and numerous calibrations of 2013's F8000, 2014's HU8500 and 2015's

JS9000/JS9500 models. And it does make sense: the company will want to use its in-house, high-quality LCD panels on flagship displays for which it charges a premium.

While the panel used (for example TS01 which indicates a Samsung LCD panel) is sometimes listed on a label outside the shipping box, the only methods to definitively identify the panel on a TV are by scrutinising the subpixels with a macro photo, or through the service menu. You can request for a TS01 panel when doing your purchase, but retailers most likely won't know what you're talking about. If there's a bunch of new TVs sitting in store, you can handpick one yourself if the panel version is stated on the box. But as the KS9500 is going to be Samsung's flagship for 2016, there shouldn't be any need to go to such trouble ■

CONTACT US...

Write to HCC, AV Tech Media Ltd, Enterprise House, Enterprise Way, Edenbridge, Kent, TN8 6HF, or email us at letters@homecinemachoice.com

Please note: we cannot guarantee to print/answer all the letters we receive. Sorry.



In it for the long haul



HCC reader **Carl Hughes** has spent three years working on this sleek home cinema – now he's enjoying the Full HD visuals and Dolby Atmos audio. Especially the latter...

Introduce yourself!

Hi, I'm Carl Hughes, 43, and I run my own bespoke carpentry, joinery, cabinet-making and fitted furniture business.

How long have you been into home cinema and what was the first setup you had?

I've been into home cinema for around eight years now, but I have been into audio since I was about 10 years old. The first AV setup I had was a cheap (£100) projector and a budget DVD player.

What inspired you to build your current cinema room?

I got going on the home theatre because I thought that it would be a great hobby to get involved with, and I absolutely love television, Blu-rays and audio.

The great thing about home cinema is that there are always new products being released, so you can always add new technology or add Blu-rays to your collection. You can never get bored with this particular hobby as it is constantly changing!

What kit do you have in the system?

For video I'm using a Panasonic PT-AT6000E Full HD 3D projector, plus a Sony BDP-S7200 multiregion 3D Blu-ray player and Sky+HD 2TB set-top box.

On the audio side I have a Pioneer SC-LX88 receiver (soon to be updated to the new Pioneer SC-LX89) and a Bowers and Wilkins speaker system – five M-1 surround speakers, a PVID subwoofer and four CCM682 in-ceiling speakers. Kit is housed in a 12U 19in rack unit from Pro Audio Stash, with a Coolrac FT01-Q



The projector is a Full HD Panasonic model – a 4K upgrade is on the wishlist

fan (also from Pro Audio Stash) keeping everything cool and ventilated.

Whereabouts in your house is the cinema? Was the room used for anything else?

The room was once my children's playroom but when I carried out some alterations to the house three years ago I gained another room to the property which is now the current playroom, so this space could be turned into

'I really love Dolby Atmos – it's by far the best cinema sound experience you can possibly imagine'

my movie den. It's situated more or less in the centre of the house and there are four other rooms around it, which is great because this helps to contain the sound.

How long did the project take?

Around three years.

Did you do all the work yourself or did you get help from friends/professionals?

I have carried out all the work myself in my spare time – I don't get a lot of spare time and this is why it has taken a while to build! However, when you really love something, as

long as you know that you are adding to your dream that is all that counts.

What was the hardest part of the build, and is there anything you would do differently in the future?

Being honest, I didn't find anything difficult in the slightest within the complete build. For instance, the Bowers & Wilkins CCM682 ceiling speakers were lovely to install as they came complete with a special cradle that has to be installed into the ceiling first, allowing the speakers to be removed 'quick release'. This is a brilliant idea, especially if you ever need to remove the speakers or carry out any service work. Actually, all the Bowers & Wilkins speakers were a real pleasure to install.

What do you love the most about having a dedicated cinema room?

The fact that I can experience Dolby Atmos in my own home any time that I choose to. I really love Dolby Atmos! It's by far the best cinema sound experience you can possibly imagine.

You've got a 5.1.4 Atmos setup. Was it easy to get it all configured?

I didn't find it tricky. I have fully calibrated my system, and you can tailor it if you feel that the Dolby Atmos sound is low coming out of the ceiling speakers, or in my case if you have high ceilings. So in other words, you can increase the level on any of the ceiling speakers to suit yourself. It was extremely easy to install, but I >



Our AV-Holic (bottom) has decorated his room with posters for Atmos flicks (*American Sniper* and *Jupiter Ascending*) and a 'Now Showing' board



The cinema uses four B&W in-ceiling speakers (left) and a Pioneer AVR (top)

would strongly recommend that good ceiling speakers are also chosen so that when you are fully immersed in the overhead sound with an Atmos soundtrack you aren't distracted by distortion, etc.

Roughly how much have you spent on the room?

The whole build in total has cost £20,000, including the seating.

We love the seating – where's it from?

It came from DFS, and can be made to any size (as long as the space available works

to DFS's seat sizes). The seating is modular, which is very handy if you need to move it around for cables, etc. The small storage footstools are cool because you can lift up the seat and store Blu-rays or remotes in them. Most importantly, the seating is extremely comfortable, which is perfect for those long movies.

So what's your favourite bit of kit?

I don't have a favourite bit of kit, really, because I love the complete setup. So I'd just have to say Dolby Atmos, because it sounds amazing in my room and gives the home cinema the punch that a real cinema would have.

And what's next on your kit list?

The Pioneer SC-LX89 receiver. After that I'm interested in a 4K projector, but I am waiting until 4K completely lifts off.

Speaking of projection, you're using a painted wall to project onto. Have you considered getting a dedicated screen?

I decided against a screen, mainly because when I watch television or a Blu-ray on my wall it looks so clear. I didn't feel the need for a screen. I also didn't like the idea of having one around on a permanent basis when it's not required, especially when the picture is as sharp as it is in Full HD.

What do friends and family think of the cinema room?

Everyone that has been in the home cinema has said that they really love it.

So what discs do you use to show off the system?

My favourite discs to show off the system have to be the Dolby Atmos demonstration Blu-rays [you can find these selling on auction websites – Ed]. These are great, perfectly tailored.

What are your favourite films?

I really love any 3D Blu-ray with Dolby Atmos. *San Andreas* and *Everest* have been recent screenings. It's a truly amazing experience. I also love the IMAX 3D demo Blu-rays.

Lastly, are you excited by 4K and next-gen sound systems?

I am very excited about 4K video, Dolby Atmos and DTS:X – all three. At present I do feel that Dolby Atmos would be my preferred format to DTS:X (especially with my Bowers & Wilkins CCM682 ceiling speakers already in place). I can't see anything beating Atmos, really. It's immense ■

SHARE YOUR SYSTEM IN THE MAG!

IF YOU WANT TO BE IN HCC, you'll need to send us some hi-res images of your cinema room. Here a few tips for great looking pictures:

1. Go big. Set your camera to take images at the largest possible size, and at the highest resolution. Don't worry about cropping or resizing – we will make them print-ready.
2. Get in focus. Make sure your photos are as sharp and clear as possible. If you have one, use a tripod, or place your camera on a flat, steady surface and take pictures on a delay. The sharper they are, the bigger we can print them.
3. Let some light in. While we tend to watch movies in the dark, our

cinema systems look their best when they are lit. If you can shoot with natural daylight, do so. If your room doesn't get a lot of light (a garage conversion, for instance) then switch on whatever lights are fitted. Avoid using flash wherever possible.

4. Be thorough. Send photos of as much of the room as possible. Images of both the front and back of the room, the kit rack, speakers, seating, disc shelf, movie poster art... The more the merrier.

5. Don't be shy. We'd love a picture of yourself – unless you want to remain anonymous...

6. Show us more. Got pictures of your room before it was a cinema? Or snaps of work being done? We love to see these, too.

Email your selection of images to letters@homecinemachoice.com with the subject heading 'AV-Holic'. Provide us with some information about your setup and we'll then be in touch.



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Game of Thrones: The Complete Fifth Season
→ HBO Home Entertainment → All-region BD

The most absorbing season of *Game of Thrones* so far is coming to Blu-ray armed with a stunning Dolby Atmos soundtrack. Head over to p99 to find out what other thrills this long-awaited hi-def boxset has in store

HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

'Okay, you distract the guards
and I'll go and steal some chairs'



Rather brilliant, to put it Bluntly

Superior cast, script and Blu-ray presentation make this Oscar-nommed thriller hard to resist

→ SICARIO

After Arizona FBI agent Kate Mercer (Emily Blunt) uncovers a mass grave linked to a Mexican drugs cartel, she is assigned to work with a Department of Defence adviser (Josh Brolin) and former Mexican prosecutor Alejandro (Benicio Del Toro) as they launch a mission to bring in cartel heavyweight Manuel Diaz and his fellow goons. But when Mercer discovers her work will involve cross-border raids into Mexico, she wonders if she's out of her depth and if her superiors can be trusted.

Brilliantly acted and blessed with an intelligent, engrossing script, *Sicario* is certainly one of the more refreshing Hollywood thrillers of recent years, going deeper than its War on Drugs environment may suggest. Don't expect by-the-numbers plotting and action beats every 15 minutes and you're in for a treat.

Picture: Presented in its original aspect ratio (2.40:1) at 1080p, *Sicario* looks great. Roger Deakins' Oscar-nominated digital cinematography routinely beguiles, be it shots of US soldiers marching in the Texan dusk or wide-angle vistas of the Southwest, and the image is consistently sharp, drawing your eye to fine details such as motes of dust drifting in sunlight or del Toro's facial hair. It's not particularly bright, often favouring a bleached, muted palette and moments of near-impenetrable darkness, but this suits the movie's foreboding air well (and an interior sequence in a roadside bar features glorious neon highlights). Sequences shot on soldier helmet-



HCC VERDICT

→ Lionsgate → Region B BD
→ £25 approx

WE SAY: Riveting and classy thriller on a Blu-ray that packs a refined audio-visual punch

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

cams during a night-time raid showcase noise and poor detail, but this is deliberate. All told, there's nothing to complain about here.

Audio: *Sicario* is at times a tense, nerve-shredding movie and the soundmix (offered here in Dolby Atmos/TrueHD 7.1) plays a vital part. Like the film itself, it's wonderfully uncluttered, mixing dialogue, effects and score elements with care. Presentation of the former is naturalistic, which means that some lines on occasion are a little hard to make out.

Jóhann Jóhannsson's original score (also Oscar-nominated) dispenses with typical Hollywood thriller tropes in favour of brooding, repetitive soundscapes (the composer says he took inspiration, in part, from John Williams' *Jaws* theme). These frequently build in level from barely-audible to room-filling (a noticeable Atmos benefit). It's a startling composition, and given plenty of prominence and depth in this mix.

For the most impressive sound design, queue up the subterranean raid in Chapter 12, which proffers immaculate audio steering. Gunfire echoes in off-screen tunnels and bullets fizz past your ears. It's impressively immersive.

Extras: Lionsgate's Blu-ray offers a quartet of extra features ranging in length from seven to seventeen minutes, and they're all worth a visit once the credits roll. Two have a welcome focus on *Sicario*'s sound and visual flair (*A Pulse from the Desert: The Score of Sicario* and *Stepping Into Darkness: The Visual Design of Sicario*); the others explore the main cast and the conception of the movie.

Hitman: Agent 47

20th Century Fox → All-region BD
£25 approx



Breathtakingly sharp, detailed and colourful 2.40:1 Full HD visuals and dynamic DTS-HD Master Audio 5.1 ensure

that this second attempt at bringing the *Hitman* game franchise to the bigscreen makes an impact on Blu-ray. Unfortunately, beneath the surface gloss is a disappointingly generic action flick that completely wastes the talents of its leading man, Rupert (*Homeland*) Friend. As well as the impressive AV performance, this Blu-ray release also includes a picture-in-picture viewing mode (with built-in 'hit counter'), deleted scenes, eight promo featurettes and a digital comic book.



The Last Witch Hunter

EntertainmentOne → Region B BD
£25 approx



Vin Diesel parlays a life-long love of *Dungeons & Dragons* into his film career with this fantasy flick that casts him as

an immortal warrior protecting the world from renegade witches. Sadly, the film fails to do anything particularly new or interesting with the setup and Diesel's gruff Kaulder is no Dominic Toretto, let alone the next Richard B. Riddick. Still, the crisp AVC 2.40:1 1080 encode ensures the film looks great on Blu-ray, while the DTS-HD MA 7.1 mix delivers all the audio bombast you'd expect. Extra features include a chat-track, a half-hour *Making of...* and four animated shorts.



Hotel Transylvania 2 in 3D

Sony Pictures → All-region BD
£28 approx



This middling animated sequel finds Dracula (voiced by Adam Sandler) worrying that his five-year-old grandchild's lack of vampire abilities may mean that he's human like his dad!

While adult animation fans may expect better from director Genndy (*Samurai Jack*) Tartakovsky, kids will love the film's slapstick silliness and it's also far more bearable than Sandler's recent live-action efforts. While the 2D and 3D Blu-ray encodes are both technically superb, the latter lacks any real wow-factor outside of a couple of gimmicky shots. Bonus bits include two chat-tracks and a guide to throwing your own monster party.



Watch out for those Hardy boys

Leading man's legendary dual-performance makes this crime biopic worth a look

→ LEGEND

As its title suggests, writer/director Brian 'Payback' Helgeland's film about Ronnie and Reggie Kray is more concerned with the mythology that has built up around London's most notorious gangsters than any attempt to actually get under their skin.

It's a shame too, as there's clearly a better film trying to get out, one that occasionally rises to the surface only to be quickly subsumed by the hit-and-miss nature of the script. Evidence of this comes through the decision to focus heavily on Reggie's relationship with Frances Shea (Emily Browning). In an ideal world this would provide us with real insight into the characters, but even here *Legend* struggles to engage with the material at anything more than surface level.

Which leaves us with Tom Hardy, who puts in double duty playing both Reggie and Ronnie. Here, the movie bursts into life, with Hardy channelling his usual intense bruiser stylings into two utterly distinct performances. Thanks to this, *Legend* is no write-off, but for our money you're still better off with Peter Medak's 25-year old *The Krays*.

Picture: While *Legend* employs a rather toned down colour palette, the sharpness of the 2.40:1 1080p image ensures that textures are intricate and there's a convincing sense of depth throughout. Black levels are stable and the shadows hold good amounts of detail. Indeed, the only real issues we have concern the instances of banding and some digital artefacts that we spotted on occasion.

Audio: StudioCanal's disc sports a plethora of soundtracks including DTS-HD MA 5.1, DTS-HD MA



Tom Hardy is a master of the 'evil eye'

7.1 and Dolby Atmos. For the purposes of this review we plumped for the latter, which delivers a coherent, but not particularly dynamic, soundscape. Dialogue is expertly rendered and the surround speakers get plenty of play in bringing the East End/West End locations to life. That said, use of the height canopy is fairly restrained, with only Chapter 10's sudden downpour and roll of thunder really standing out as particularly dramatic.

Extras: Kicking off with a choice of Ronnie or Reggie menus (the only differences being the background graphics and music that plays over it), the Blu-ray offers up a fair array of bonus features. In addition to a commentary track from Helgeland, there are interviews with most of the principal cast and crew (but, oddly, not leading light(s) Tom Hardy), an interactive map of East London to explore, premiere footage and a featurette talking to people who encountered the real Krays.



HCC VERDICT

Legend
→ StudioCanal → Region B BD
→ £23 approx

WE SAY: Not even Hardy's towering performances can stop this biopic from feeling like a missed opportunity

Movie ★★☆☆☆

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★☆☆☆

It was destined to be an episode of *Escape to the Country* like no other...



The height of gothic melodrama

Guillermo del Toro's spooky romance scares up the UK's first-ever DTS:X Blu-ray soundtrack



The film employs distinct colour palettes for its two different settings

→ CRIMSON PEAK

Guillermo del Toro's latest stars Mia Wasikowska as Edith, a young American swept off her feet by a seductive stranger (Tom Hiddleston) – he then whisks her off to live in England alongside his manipulative sister (Jessica Chastain). But what terrible, perverse secrets does the decrepit Allerdale Hall hold? And can Edith uncover them before she becomes another of the house's victims?

Misleadingly marketed as a straight-up horror in the runup to its cinema release, *Crimson Peak* actually belongs to the literary tradition of gothic romance (so, it's more *Wuthering Heights* than *Dracula*). That's not to say that del Toro's usual fascination with the supernatural isn't present, but as with *The Devil's Backbone* it's used to add another flavour to the film rather than being the focus of the plot.

Overwrought it may be, but that's ultimately part of the genre's appeal – and the only way that the cast could ever hope to measure up to Allerdale Hall itself, a triumph of set design that is the true star of this frightfully entertaining flick.

Picture: Framed at 1.85:1, Universal's AVC 1080p encode never fails to impress with its crispness and clarity. Detailing is bang-on throughout (check out Chapter 5's creepy closeup of a butterfly being devoured by ants), helping highlight the various textures inherent in the costumes.

Crimson Peak employs two distinct colour palettes for its different settings, with the warmth and modernity of Edith's Buffalo hometown implied through a prevalent orange tint, while Allerdale Hall is all deep blacks, cool blues, and rich reds of clay oozing up through the floor and out from walls. Taken together with occasional flourishes of blue and green lighting (which harks back to the work of Mario Bava),

the result is a beautifully saturated and impactful Blu-ray encode.

Audio: It's fitting that the UK's first DTS:X-encoded Blu-ray positively radiates immersive atmospheric FX.

Sound designer Randy Thom (Director of Sound Design at Skywalker Sound) and his team orchestrate the movie's 3D

After *Alice in Wonderland*, *Stoker* and *Crimson Peak* it appears Mia Wasikowska (right) has an affinity for all things gothic



5
COPIES
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WIN! WIN! WIN!

Visionary director Guillermo del Toro's stunning gothic thriller *Crimson Peak* is now available on Blu-ray, DVD and Digital HD courtesy of Universal Pictures (UK). To celebrate, we've got five *Crimson Peak* Blu-rays to give away.

Question:

Which of these films was not directed by Guillermo del Toro?

Answer:

A) Blade II B) The Others C) Pan's Labyrinth

Email your answer to Competitions@homecinemachoice.com with '*Crimson Peak*' as the subject heading – and don't forget to include your postal address! See p84 for full terms and conditions.



Director Guillermo del Toro haunts his lead actress on set

soundstage like a gothic symphony. When the film shifts to Allerdale Hall, the house, sinking into crimson clay, constantly shudders and shifts around you. At times, it felt as if our entire listening room was slowly descending into the depths of hell. The LFE heaves with ominous portent.

The multilayered design is wonderfully cohesive. There are no obvious flyovers or explosions here; this is a more subtle listening experience. A yappy dog and fluttering moths flit from behind and circle above, while ectoplasmic ghosts caress your hackles.

Shortly after arriving, Edith takes a bath, unaware that one of the house's sinister spooks is sneaking up (Chapter 9). The height channel creaks ominously, before the spectre sonically sucks the air from the room. It's highly disconcerting.

We listened to the disc's DTS:X mix in a 9.2 configuration, which is to say a conventional seven channel surround setup with two heights. Wind whistles around the soundstage, while the height channel funnels snow down from the hole in the rafters. During exterior shots, the clanking clay-mining apparatus appears to sonically expand the walls of the room.

Overall, Guillermo del Toro's haunted house provides a sublime listening experience and an

impressive UK debut for DTS:X. Note that if you don't have the requisite kit, the DTS:X mix defaults to a 7.1 track. And, if it all sounds a bit too spooky for other members of the family, the disc also includes a DTS Headphone:X mix.

Extras: The erudite del Toro provides an informal solo commentary for the film, which proves every bit as honest, enjoyable and informative as fans have come to expect from previous efforts.

I Remember Crimson Peak is a collection of four videos dealing with specific settings (*The Gothic Corridor*, *The Scullery*, *The Red Clay Mines* and *The Limbo Fog Set*), mixing behind-the-scenes footage with sit-down chats between the co-writer/director and his three lead actors.

Then there are featurettes. *A Primer on Gothic Romance* looks at the film's literary origins, while *The Light and Dark of Crimson Peak* deals with the film's aesthetic. *Hand-Tailored Gothic* focuses on costumes, and *A Living Thing* deals with the creation of the spectacular Allerdale Hall set. On a similar theme, Tom Hiddleston takes viewers on a tour of the set in *Beware of Crimson Peak*. Meanwhile, as its name suggests, *Crimson Phantoms* explores the creation of the film's ghosts. Five deleted scenes round out the extras.



Peak performances: Jessica Chastain (top) and Mia Wasikowska (above)

Uh-oh! The curse of the snuggling spectre strikes again!



HCC VERDICT

Crimson Peak

→ Universal Pictures → All-region BD

→ £25 approx

WE SAY: Guillermo del Toro's latest gothic chiller is a good excuse to upgrade your system to DTS:X

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

ARCADE ACTION

Bigscreen home entertainment isn't just about movies anymore. **Rik Henderson** checks out a videogame vying for time on your home cinema system...



LEGO Marvel Avengers

Warner Bros. Interactive Entertainment → PS4, Xbox One, PS3, Xbox 360, Wii U, PC, PS Vita and 3DS → £50 approx

After a first geektastic outing for Marvel Comics characters in *LEGO Marvel Super Heroes*, developer TT Games turns to the movies for inspiration for the second, and in doing so has created one of the best LEGO games in years. That's because lampooning existing material is treading familiar and successful ground for the studio that has carved a niche with its platform/puzzle franchise. And it's at its best when adapting popular flicks, adding a decent slice of mirth along the way.

This time around, the inspiration comes from both *Avengers...* movies, with scenes borrowed from the recent bigscreen adventures of Captain America and Thor added for good measure, plus *Iron Man 3*. Of course, this is all LEGO-fied, with battlefields strewn with brick-based pick-ups and physical barriers to overcome. Sometimes this can be done through brute force, sometimes through cunning smarts. It's a fun combination. There are always two characters on screen to choose between – sometimes there's even more – and switching from one to another in order to use their unique abilities is key.

Where *LEGO Marvel Avengers* differs to most is in combat. TT Games has given its playable characters (around 250 or variations of) heaps of individuality. This is most noticeable with special combat finishing moves. Characters can even combine for outstanding double-team finishes, such as Thor hammering at Cap's shield to dispatch all foes in a wide radius.

It is small touches like this that make the game. The soundtrack too, which is lifted from the films, builds ambience, as does the voice acting, which includes movie dialogue and newly recorded lines from cast members and other notable actors (Mark Hamill pops up as Klaw).

The overall experience has some flaws, though: there's an absence of heroes not in the Marvel Studios' stable at present, including the X-Men and Spider-Man, and the visuals are more cutesy than jaw-dropping. But there's a decent amount of playtime here; outside of the main story you can visit each location in open-world formats to

seek out unlocks and complete side-missions. Plenty of bang for your buck, then. Or should we say Bucky?



A Touch of Zen: Limited Edition

Eureka: Masters of Cinema
Region B BD & R2 DVD → £28 approx



Following hot on the heels of its stunning Blu-ray outing for King Hu's 1967 martial arts hit *Dragon Inn* comes this equally sensational hi-def presentation of the filmmaker's 1971 wuxia

masterpiece. Despite its age, this influential film still impresses with its awesome action and pictorial artistry – the latter never more evident than in the new 4K restoration used as the basis for this Blu-ray. Extras include commentary on selected scenes, plus a bonus DVD hosting a video essay and doc about King Hu.



The Ninja Trilogy

Eureka Classics → Region B BD & R2 DVD
£40 approx



An enticing buy for fans of kitsch '80s action movies, this boxset brings together reasonable HD encodes for Cannon's trio of martial arts 'classics'. *Enter the Ninja* may

have got the fad started, but is now more notable for its bizarre cast (Franco Nero! Susan George!). Much better is *Revenge of the Ninja*, which promotes Sho Kosugi to leading man and ups the action quota accordingly. Finally, *Ninja III: The Domination* may just be the most '80s movie ever made with its oddball tale of a young woman (Lucinda Dickey) possessed by a ninja spirit.



Hercules

101 Films → Region B BD
£13 approx



This 1983 version of the Greek legend has to be seen to be believed. Lou Ferrigno grunts as the muscle-bound hero who throws bears into space, battles stop-motion robots and must

resist the allure of Sybil Danning's epic cleavage in a film clearly pitched as *Star Wars* meets *Clash of the Titans*, but which ended up like some sort of gaudy disco pantomime. Despite some print damage, the Blu-ray's 1.85:1 encode is perfectly watchable, as is the (fairly bright) LPCM 2.0 audio. The trailer is also included.





DISC
OF THE
MONTH

Fantasy series aims even higher

The move to Dolby Atmos as standard sees HBO's popular show raise the bar again for TV on BD

→ GAME OF THRONES: THE COMPLETE FIFTH SEASON

Exactly how many times can HBO's fantasy series pull the rug out from under its viewers? Even in the aftermath of the Red Wedding, it still has the power to shock and surprise audiences and this fifth year is no exception.

The cost of sticking to your principles and being unwilling to bend has always been one of the key themes of the series and (without getting into spoilers) never has it been made more explicit as it is during this gripping 10-episode run. Most thrilling of all, though, is the confidence *Game of Thrones* shows in going off-book, which results in some of its most memorable moments. Backing this up is a level of production design and VFX that puts many movies to shame, let alone other TV shows.

That said, there's at least one misstep regarding one key character and while the visit to Dorne adds another dimension to the show's visual palette, none of the people we meet there feel particularly interesting. Yet these are minor quibbles. *Game of Thrones* continues to fire on all cylinders and has no trouble keeping you hooked. And with it having now exhausted all five of author George R. R. Martin's novels to date (the sixth has just been delayed again), we can't wait to see how the series moves on.

Picture: Whether it's the sun-drenched hues of Dorne's Water



Gardens or the bleak, icy wastes that surround Hardhome, this Blu-ray set's ten AVC encodes consistently deliver exquisite 1.78:1 1080p imagery.

Overall clarity is high, black levels are deep and stable, and colours are rich and vibrant where warranted. This Blu-ray release simply never puts a foot wrong.

Audio: Previous *GoT* seasons have impressed with expansive and dynamic DTS-HD MA 5.1 mixes. Season Five takes things a step further with a Dolby Atmos upgrade.

Right from the off those additional height channels work hard at differentiating between the show's environments. And it's not just atmospheric effects that benefit – when Dany visits her captive dragons (Episode One, Chapter 6), a jet of flame that erupts above her head is replicated above your own. Just make sure to visit the Audio sub-menu on the discs first, as they default to lossy DD 5.1.

Extras: In addition to the usual interactive In-Episode Guides, nine of the ten episodes are accompanied by at least one cast and crew audio commentary (Episode Eight gets three of them and Episode Nine two). Other goodies include a look at one day in the production across three countries, a featurette on the new characters and locations, a two-part doc about the show's parallels with real historical characters, a half-hour look at the making of the season finale and a whole lot more.



Even visiting the local fancy dress shop can be dangerous in *Game of Thrones*



HCC VERDICT

Game of Thrones: The Complete Fifth Season

→ HBO Home Entertainment
→ All-region BD → £45 approx

WE SAY: The best Blu-ray outing to date for this must-see TV series

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★



Biopic strikes the perfect balance

Fact-based drama and impressive stereoscopic imagery combine to thrilling effect

→ THE WALK 3D

On August 7, 1974, French high-wire artist Philippe Petit spent 45 minutes performing an unauthorised wire-walk between the Twin Towers of the World Trade Center.

The story of how and why he pulled off this feat has already been immortalised in James Marsh's 2008 documentary *Man on Wire*. However, as good as Marsh's film may be, one problem remains: no footage of the wire-walk itself exists. Which is where this \$35million biopic *The Walk* comes in. Sort of.

For its first two acts this entertaining flick skims along on the charm and cheek of Joseph Gordon-Levitt's performance as Petit, as he plans his stunt and gathers together the team he'll need to achieve it. But it's the final act, where Petit and his crew race to set up the high-wire and he attempts the walk itself, that enables this dramatic reconstruction to serve as the perfect companion piece to Marsh's award-winning doc. Elegantly put together by director Robert Zemeckis, this is a close as anyone will ever get to understanding just what Petit achieved. And, thanks to the impressive stereoscopic imagery, it's also the closest that any sane person will get to the feeling of balancing on a cable 1,350 feet above the streets of New York.

Picture: As mentioned above, *The Walk* is a real 3D showstopper. While the film was converted in post, it was always planned for 3D and the Blu-ray's 2.40:1 stereoscopic transfer conjures up a palpable sense of volumetric space that Zemeckis makes unnerving use of. Unsurprisingly, the highlight is the final wire-walk (Chapters 13-15), where the cable often



seems to disappear into the screen at one end and extend out of it at the other. Meanwhile, overhead shots (such as that of Petit lying on the cable at the start of Chapter 15) offer vertigo-inducing depth.

While the accompanying 'flat' presentation (given its own HD platter) lacks this 3D visual dynamism, the 'Mastered in 4K' encode has plenty of strengths of its own, including razor-sharp clarity, deep black levels and life-like details.

Audio: Both hi-def presentations are joined by the same DTS-HD MA 5.1 soundtrack. While not an overtly aggressive mix, it supports the onscreen action with crystal-clear dialogue, a full-bodied musical score and convincing effects that engage the entire soundstage.

Extras: Sony Pictures' Blu-ray includes seven deleted scenes and three featurettes looking at Gordon-Levitt's training, the supporting cast and the visual effects.



HCC VERDICT

The Walk 3D

→ Sony Pictures → All-region BD
→ £28 approx

WE SAY: A fascinating true story transformed into a spectacular showcase for 3D Blu-ray

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

The Visit

Universal Pictures → All-region BD
£25 approx



This 'found footage' thriller (about a couple of kids trying to figure out the reasons for their grandparents'

disturbing behaviour) finds filmmaker M. Night Shyamalan retreating from the world of big-budget blockbusters and delivering the sort of stripped down thrill-ride that he does so well – although it's still not a return to the brilliance of *The Sixth Sense*. The storytelling trick employed means that *The Visit* doesn't deliver a *tour de force* of hi-def video and audio, yet AV quality is still pretty strong. Limited extras include a short *Making of...* and 10 deleted scenes.



Gemma Boverly

Soda Pictures → All-region BD
£18 approx



This adaptation of the comic strip by Posey Simmonds stars Gemma Arterton as an English ex-pat who moves to France and becomes the object of obsession for a neighbour who sees parallels between her life and that of the heroine of Gustave Flaubert's *Madame Bovary*. Driven by Arterton's fun and flirty performance (as was the 2010 adaptation of Simmonds' *Tamara Drewe*) the film is a lighthearted farce that benefits from some gorgeous location filming, which in turn results in a smashing 1080p encode. Extras include a half-hour *Making of...* and interviews.



Sherlock: The Abominable Bride

BBC Worldwide → Region B BD
£22 approx



Steven Moffat and Mark Gatiss' TV reimagining of Sherlock Holmes delivered its most divisive outing yet with this holiday special that takes the cast back to a Victorian setting. Whatever you made of the mystery itself (and we rather enjoyed it), this Blu-ray is sure to impress with its detailed AVC 1.85:1 1080p image and a Dolby Atmos mix that makes surprisingly effective use of the expanded soundfield. A bonus Blu-ray disc hosts a half-hour *Making of...* documentary, eight behind-the-scenes vignettes, a video diary and interviews.



The Last Kingdom: Series One

Universal Pictures → All-region BD
£35 approx



The BBC's brilliant, bloody and brutal initial eight-part adaptation of Bernard Cornwell's *The Saxon Stories* series of historical novels cuts an imposing figure on Blu-ray. Spread across three platters, the 1.78:1-framed 1080i50 encodes are sharply rendered and reveal lots of fine details. Just as impressive are the DTS-HD MA 5.1 mixes, which feature plenty of dynamic heft, aiding things no end when it comes to the major battle sequences. Bonus features take the form of a trio of revealing and well-crafted behind-the-scenes featurettes.



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Nightmares in a Damaged Brain

88 Films → Region B BD
£20 approx



Some thirty-odd years after its UK distributor was jailed during the video nasty scare for releasing an uncertified version of the film, this notorious 1981 horror (aka *Nightmare*) has now been passed uncut by the BBFC. While the film is every bit as shocking as promised, it's also rather deeper than the typical low-budget slasher, showcasing an interest in character psychology. The film's scuzzy low-fi aesthetic ensures that the new 2K restoration won't win beauty contests, but it still looks much better than we imagined it would.



Zombie Flesh Eaters 2

88 Films → Region B BD & R2 DVD
£20 approx (online exclusive)

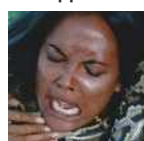


This belated follow-up to Lucio Fulci's 1979 splatterfest saw the director bow out after only a few weeks of shooting. Largely the work of incoming director Bruno (Monster Shark) Mattei, the finished film (aka *Zombi 3*) falls some way short of its predecessor, but isn't without its share of 'so-bad-it's-good' moments. Based on a new HD master, this Blu-ray's 1.66:1 encode looks surprisingly clean and colourful. As well as a selection of interviews and a Q&A, this www.88films.co.uk-exclusive version also comes with a nifty slipcase and the *Paura: Lucio Fulci Remembered* bonus DVD.



Emanuelle and the Last Cannibals

88 Films → Region B BD
£20 approx



Insanely prolific Italian director Joe D'Amato carried on his love affair with sex and violence with this third follow-up to 1975's *Black Emanuelle*. This time out our hedonistic heroine (Laura Gemser) heads off to the Amazon in search of a cannibal tribe; what starts off as yet another erotic odyssey soon becomes a nightmare of gut-munching terror. While it's good to see this deliriously daft film has now made it to the UK uncut, the 1.85:1 1080p imagery lacks detail and extra features are in rather short supply (just a trailer and alternate Italian credits).



Evilspeak

88 Films → Region B BD
£25 approx



One of the more unlikely victims of the video nasty furore, this goofy fright flick is essentially *Revenge of the Nerds* meets *Carrie*, only with Clint Howard playing a bullied military cadet whose preferred method of revenge involves satanic pigs. As silly as it sounds, it's also a lot of fun and released here in an impressive Blu-ray package.

In addition to a surprisingly crisp and clean 1.78:1 Full HD encode, the disc packs in loads of extras including a chat-track, a good-natured *Making of...*, and even an SD presentation of an extended cut of the film itself.



The king of corny horror franchises

Trio of middling horror movies is bolstered by a brilliant new documentary on Blu-ray

→ CHILDREN OF THE CORN TRILOGY

Was there ever a more unusual franchise than the one that followed the 1984 film adaptation of Stephen King's short story about a corn-worshipping cult of killer kids? While the story may have seemed like a one-and-done sort of deal, Hollywood mini-major Miramax grabbed the rights for its nascent horror arm in the early 1990s and proceeded to unleash a flood of sequels.

In addition to the original, this boxset offers up the only other films in the series to have ever seen the inside of a cinema (no matter how fleetingly). *Children of the Corn II: The Final Sacrifice* (1993) is more-or-less a direct follow-up to the original that mixes in a garbled ecological message and some Native American mysticism. *Children of the Corn III: Urban Harvest* (1995) gives the series an 'urban spin' and features a 'spectacular' finale that includes a then-unknown Charlize Theron being attacked by what looks like a skinned Muppet.

And that's as good as the series ever got...

Picture: The first two films in the set look pretty good for catalogue titles. Both 1.78:1 Full HD encodes are crisp and clean, with nicely defined textures and authentic colour palettes. Indeed, the source materials for both are in good shape for a couple of low-budget horrors.

While all of the above can also be applied to the majority of *Urban Harvest*'s 1.78:1 transfer, the film's reliance on rather primitive digital effects sees a notable drop in resolution each time one pops up on screen. And things only get worse when it comes to

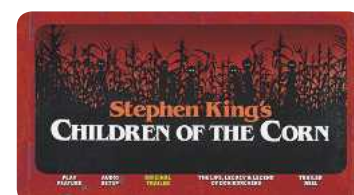


the compositing tech used to blend a giant puppet monster with live-action footage.

Audio: All three titles are accompanied by decent LPCM stereo mixes that no doubt offer an accurate presentation of the original soundtracks. *Children of the Corn* also gets a restrained DTS-HD MA 5.1 remix that mainly benefits from the LFE channel.

Extras: As well as the trailer, series opener *Children of the Corn* is accompanied by *The Life, Legacy and Legend of Donald P. Borchers*. This is a wonderful feature-length documentary about the film's producer, packed with fun tales of cost-cutting, attempted murder and naked ADR sessions with Grace Jones. A fine example of real added value.

The second film is joined by a trailer and a poor-quality workprint presumably sourced from VHS. The third adds a trailer, a featurette about the 2009 TV movie remake of *Children of the Corn* and an extended version of the puppet-heavy finale.



HCC VERDICT

Children of the Corn Trilogy

→ 88 Films → Region B BD

→ £35 approx

WE SAY: A fun set for horror fans, the high point of which is the superb new doc about producer Don Borchers

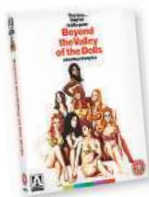
Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★



Counterculture classic comes good

Get ready for the ultimate hi-def freak-out with Russ Meyer's cult masterpiece on BD

→ BEYOND THE VALLEY OF THE DOLLS: LIMITED EDITION

Planned as the first in a three-picture deal that a flailing 20th Century Fox made with director Russ Meyer, this name-only sequel to the studio's 1967 screen adaptation of Jacqueline Susann's trashy bestseller is one of those unlikely movies that seems to get better and better with age.

Beyond... follows the fortunes of all-girl rock group The Carrie Nations; their rapid rise to fame and the way that the various temptations of the lifestyle bring them crashing back down to earth. It's a story that we've all seen play out in movies countless times before, but never taken to such parodic excess as Meyer and co-writer Roger Ebert do here. And while it may seem restrained compared to the rest of Meyer's filmography, *Beyond...*'s gaudy maelstrom of debauchery still feels otherworldly compared to what the major Hollywood studios were doing in 1970. No wonder it ruffled censors' feathers (something it continued to do in the US until fairly recently).

Add in the surprisingly great rock tunes and some of the most quotable dialogue ever written and you have a fearless, purposefully over-the-top kitsch classic that delights and surprises in equal measure.

Picture: Based primarily on a 2K restoration of the 35mm Scope interpositive, *Beyond...*'s Panavision cinematography looks sensational on Arrow Video's Blu-ray. Not only is clarity and detailing



'It's my happening and it freaks me out!'



immeasurably improved over 20th Century Fox's old DVD release, colours in the 2.35:1 1080p image are also much stronger.

Audio: *Beyond...* sports a fine LPCM mono soundtrack that does a brilliant job with all of the wonderful dialogue, and delivers the rock numbers with surprising range and musicality. A multichannel mix would have been a fun addition, though.

Extras: The Blu-ray packs two commentaries, an isolated music track, and numerous interviews and featurettes. This initial release also includes an anamorphic 1.78:1 DVD of Meyer's rarely-seen second (and final) film for Fox, the rather disappointing obscenity trial drama *The Seven Minutes* (1971).

HCC VERDICT

Beyond the Valley of the Dolls: Limited Edition

→ Arrow Video → Region B BD & R2 DVD → £25 approx

WE SAY: This sensational Blu-ray is as stacked as any of Meyer's heroines

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

The Trip

Signal One → Region B BD
£20 approx



Refused a certificate by the BBFC four times between 1967 and 2004, this psychedelic cult classic follows a TV director (Peter Fonda) as he experiences his first LSD trip. Anybody

looking for anything in the way of plot here will be bang out of luck, instead what director Roger Corman (working from a script by Jack Nicholson) offers is a succession of mind-melting experiences and images. In addition to its wealth of bonus features, this UK Blu-ray offers a surprisingly strong 1.85:1-framed Full HD presentation of Corman's original cut of the film, ensuring the disc is a must-own for fans.



Gas-s-s-s

Signal One → Region B BD
£20 approx



Roger Corman's final film for AIP (American International Pictures) saw him dive back into the world of counter-

culture cinema with a rather laboured post-apocalyptic comedy where the accidental leaking of an experimental gas results in the death of everyone over the age of 25. Hacked about by AIP, the film is undoubtedly a disappointment, but as you'd expect from Corman, is not entirely without its unusual charms. In addition to a solid 1.85:1 AVC 1080p encode, this BD also features two 70-minute interviews with Corman (from 1970 and 1991) that play in place of commentary tracks.



Mr. Majestyk

Signal One → Region B BD
£20 approx



Overshadowed by *Death Wish* on its original cinema release (the two films hit US screens only a week

apart in 1974) *Mr. Majestyk* is a far superior Charles Bronson revenge thriller. Directed by Richard Fleischer from a script by Elmore Leonard, it sees Bronson giving his all as a Vietnam vet-turned-watermelon farmer who runs afoul of a mob hit man. This Blu-ray has robust 1.85:1-framed visuals and cleanly rendered mono audio. Impressive extras include a chat-track by Bronson expert Paul Talbot and interviews with actress Lee Purcell and cinematographer Richard H. Kline.





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ENTER A NEW CHAMBER OF

HORRORS...



Since its birth in 2000, FrightFest has grown to be one of the world's best-loved film festivals. Now it's bringing jewels of the horror genre to a video-on-demand audience under the FrightFest Presents label. **Anton van Beek** quizzes the guys behind the gore...

Paul McEvoy (left) and Alan Jones
– the driving force behind FrightFest

FANS OF HORROR, or genre movies in general, will have heard of FrightFest, the international film festival which plants its flag in Leicester Square each August, runs a two-day terrorthon at the Glasgow Film Festival in February, and organises one-off screenings, panel discussions and more throughout the calendar. Since its debut in 2000, it's hosted premieres from directors including George A. Romero and Neil Marshall, and been described by Guillermo del Toro as 'the Woodstock of Gore'.

Last year FrightFest spread its wings, moving into video-on-demand with the launch of six titles under a new FrightFest Presents label in collaboration with Icon Film Distribution. This six-pack of genre gems are available for HD streaming via Amazon Instant, iTunes, Google Play and more. With a second wave of titles beginning at the end of February, I sat down with FrightFest co-creators Paul McEvoy and Alan Jones to discuss their plans for the future and the festival's meteoric rise.

Where did the idea for FrightFest come from?

Paul McEvoy: I used to attend the brilliant Shock Around the Clock events at the Scala and then the Electric Cinema in London. Alan was one of the co-directors. They were all-day and all-night events that would start around 9am on a Saturday morning; we'd emerge like zombies from the cinema the next day at 10am. I used to love them so much.

They stopped for whatever reason and I saw there was a gap in the UK genre market for a festival that

would be the one that I'd want to go to. I contacted Alan and asked if he'd be interested – obviously a different and much more expanded proposal to Shock Around the Clock. I also spoke to Ian Rattray, who I knew as well. He deals with a lot of the tech stuff. At that time everything was on print so, at a panic, he could get hold of a print in Mexico and sent overnight to London, something Alan and I wouldn't have a clue about. After the first couple of years we got Greg Day involved, who is a PR *par excellence*, and had worked with [Dario] Argento and [Alejandro] Jodorowsky. The four of us became a very good team.

Was it hard putting the first one together?

Alan Jones: It's fair to say that we just did it, we never gave it a second thought. It wasn't even as if it was that planned, it was more 'Let's get some people together.' More planning had to come over the years as we realised we couldn't just scramble through it any more. We actually had to take it seriously.

It's also important that we coincided with a level of genre awareness that had come out of DVD. I mean, people were actually looking at this stuff. It was different from the 1980s, where you only had magazines and video cassettes.

Anyone who has been to FrightFest will know that there's this terrific energy and sense of community outside of the screenings. What is it about horror fans that encourages this?

AJ: It's because we're all in it together. I'd trust

The new FrightFest Presents logo
and (below) Jonathan Ross opening
the 2015 festival



anybody who told me they liked *The Texas Chain Saw Massacre*, but I wouldn't trust anybody who told me they like *Bridget Jones's Diary*! There's a shorthand between fans that doesn't exist in any other genre and I think you can recognise a like mind. And we brought those people together, who I think were looking for some venue, some place like this.

What's the process for securing films for the festival? Is it easier now than it was before?

PM: There are certain movies that we track right through from inception to completion, so we are always on exactly what's being made worldwide at any given moment in time. So there's that. Then there's the submissions process, which we do through FilmFreeway, so we're getting features and short films through that pretty much all year round. Just in the last week we've probably had around 30 shorts and five or six features.

We also attend as many international genre festivals as is humanly possible. Alan's also on the set of a lot of films, especially UK productions, so he's getting in at the grassroots...

AJ: I just say to producers 'Do you think there's a chance of us showing...' I can gauge if it's going to be a FrightFest sort of film. And that is a specific. There is a FrightFest film. And I can gauge if it is.

What exactly is a FrightFest film?

AJ: A really good FrightFest film is something that's quirky, that's different, that actually has something that you haven't seen in the mainstream. Paul and I have a sixth sense about this, we know it when we see it.

PM: The perfect example is Steve Oram's *Aaaaaaaah!*, which on paper you wouldn't really classify as a FrightFest film. But as soon as I saw it, I knew it would be perfect for our audience. You certainly couldn't class it as a horror. But it is a pure genre film.

AJ: Steve's been a friend to FrightFest for a few years anyway. So that was the perfect synergy... and the perfect kickoff for the FrightFest Presents label.

Onto the label: the first wave of VOD titles – including *Aaaaaaaah!* – has been available for a few months now. Have you had much feedback from fans?

AJ: You know what the FrightFest audience is like. They actually are collectors. They want it in their hands. They want a physical copy. So, the idea behind FrightFest Presents, originally, was to take it beyond our hardcore audience. We wanted people who had heard of us, but just wanted to dip their toe into the water, so to speak. The sort who would stream something and think that if this is the sort of movie they show at FrightFest then maybe we should go along and take a chance.

PM: We've had fun emails, where people are having their own FrightFest nights and FrightFest weekends. They're watching the six movies, or maybe three of the movies back-to-back on a Saturday night, and then giving us their feedback. It's great having the titles out there – the six existing and the six forthcoming and whatever else the future may bring.



The festival takes over London's Vue West End cinema every August

AJ: And we worked out that because we showed 76 films at the last FrightFest, due to multiple screenings happening at the same time you could only see about 30 of them. So there is an audience who were there but still didn't see *Night of the Living Deb* or *The Sands*. This is a good way of making sure that they get the opportunity.

Is this the second stab at launching a FrightFest Presents label? There was a DVD of Ti West's *The Roost* under the banner a few years ago.

AJ: That was with Revolver. We thought it was a good idea, and I stick by the films we chose for Revolver. They were good ones. But they were too busy dealing with a certain niche area, which wasn't in our niche area. Then we went with Wild Bunch and we found ourselves in the amazing situation with them telling us they wanted our sensibility, because they're a French-based company, and then every time we said 'Okay, here's a film we want', they were like, 'Hang on, it's too English'. So that didn't work.

Icon came to us. We love Icon. Zak Brilliant [Head of Theatrical at IFD] really gets what FrightFest is all about. He's always been there with films to give us for the main festival; you can go back and see that there was an Icon movie playing every year. He understood the value of it. And Icon is prepared to take our view onboard. Okay, so they've seen a film and they've gone, 'Look we don't really like it, but we understand why you want to release it'. They've been absolutely the perfect partners.

With the exception of *Aaaaaaaah!*, which has had a Blu-ray and DVD release, you're bypassing discs in favour of VOD. Was that always the plan?

AJ: That was always what Icon wanted. And years ago I thought DVD was going to be dead and buried by this time. I still can't believe it's staggering on.

Most people think that if it goes straight to VOD it means it's complete rubbish, and that's not true. We wanted to make sure that people realised that we've put our reputations behind these films, we have our own quality control. We don't think we've released anything that's crap.

PM: And we always said it was never about week one, which it often is with DVD. It's actually about

week 21 or week 51. Because we've put our brand – our seal of approval – on the titles, we want people to continue to enjoy them this time next year.

AJ: We want a quality back-catalogue of stuff we will always stand by. And that is what I think we're building.

PM: Now, we are looking into physical releases for the first wave of six titles...

AJ: ...But originally we didn't think that was ever going to happen. Yet some of them were so successful that Icon said to us that we should do physical, too.

PM: I always say to Alan that it's weird that these six films are out there, but they're not physically out there because they're not in our hands. And I think it's the collector mentality in all of us that, if something doesn't exist in the real world, then it doesn't really exist. That's going to change in the future. But I think discs are still a strong, important part of the UK market.

Is the idea that everything that is released through the label will have been shown at one of the FrightFest events?

PM: No. It's a completely broad church. There are no parameters on it. Absolutely not. That's the short answer. Our eyes are wide open.

AJ: Obviously the marketing opportunities can't be discounted. If we chose a film, yes we want it to go to August [to screen at FrightFest] as a platform for awareness. But I don't think we can be too precise about that kind of stuff. We're very open to where this is all going and we'll roll with the punches. Unlike other people, we haven't got a set formula.

When it comes to choosing the films, are their arguments and disagreements?

PM: Always. Again, there's no hard and fast rule, but if either myself or Alan see something that we know should definitely go into the festival, no matter what, then we bow to each other's choices. With a lot of movies, one of us always runs it past the other. So Alan will say, 'Take a look at this and give me your honest thoughts'. And I do.

We do disagree on stuff. But if one of us puts up an argument against it, then often the mind will move in that way. And then of course we have Ian and Greg as the back-up, as well. So we sometimes farm it out to them and ask what they think. But I think 90 per cent or more of the stuff we show is chosen by us two between us.

Also – and we're not going to take this theory into the FrightFest Presents label – but for the festival itself, it's good to have ones that dip, because the audience will love it. *Day of the Dead 2: Contagion* at the Odeon was an hilarious screening. But we knew that people would have fun. After all, if you have a diet of 27 or 30 movies over a weekend and they're all on the same level, it would get quite boring. So you have to throw in a couple of movies that aren't so good. Argento's *Giallo* was another. I mean, everybody wanted to see the movie, but it was an



Screen legend Barbara Crampton (*Re-Animator*, *From Beyond*) took to the stage at FrightFest 2015 for a Q&A with Alan Jones

hilarious screening. So that's why sometimes having a few of the lesser titles makes the other ones shine.

How important is the balance between big names and new talent for the festival/label?

AJ: We're more about the discovery of new talent now. And we can see which rising talents are coming through. We really can. It's crystal-clear to me. And the icons are becoming too few and far between, which is why they're so difficult for us to get. Not just to our festival but to anybody's.

PM: A lot of the elder statesmen won't travel...

AJ: John Carpenter.

PM: Or they've distanced themselves to a degree from the horror genre...

AJ: David Cronenberg.

PM: With regards to the festival we try to keep a balance of the brand-new and nurturing talent we've discovered in previous years, the Ti Wests, the Adam Greens, the Guillermo del Toros. And then we do like to have a few of the elder statesmen as well. We had Robert Englund over in 2014 for a retrospective of *A Nightmare on Elm Street* and a screening of his film *The Last Showing*.

The first wave of titles was released in one go. The next wave is spread across three weeks...

AJ: Yeah. Icon thought that six in one go was a bit... We wanted to make a big splash when we did that. But we've decided that two per week is preferable.

And do you have to deliver a certain number of waves per year?

PM: Again, no. We don't want to oversaturate the market with crap, for want of a better word. It's got to be quality...

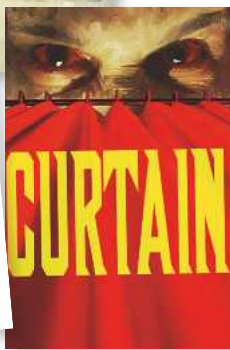
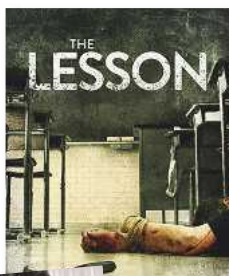
AJ: It's got to be FrightFest. That's the most important thing. We do intros – we do that because we want to give the audience some sort of idea of what we do at FrightFest, that we get up and talk before the films. These people aren't stupid. We're not going to stand there and go 'You're going to love this!'. We give them some info about why we like it and where we're coming from. And I know it went down well, so we're going to do those again for the next wave.

What can we look forward to in the second release of titles?

AJ: Well, if I had to pick a favourite – one which I always wanted and was so thrilled when we got it – it's *Emelie*. That had to be held back into Wave Two in order for it to go day-and-date with the US. We get a lot of that sort of thing. And with *Last Girl Standing*, when we showed it at the festival it was so new the filmmaker [Benjamin R. Moody] asked us not to release it straight away, to hold it back so it could get a little more exposure. And that's great, because it's been winning awards at other festivals. There is method in what looks like complete madness.

PM: I think Wave Two is beautifully diverse in its six titles. There's something for everybody there. It mirrors the broad dynamic of the worldwide genre market, and it feels kind of like putting the festival together, where we've chosen the cream of the crop,

Future VOD titles include Brit horror-thriller *The Lesson*, suburban nightmare *Emelie* and sci-fi *Curtain*



we've proposed them as titles, and Icon has then said, 'Yes, we agree with your choices'. *Curtain* is a brilliant science-fiction mind-bender; *The Unfolding* is a really smart UK found-footage movie that is genuinely terrifying. And [director] Eugene McGing has delivered a brand-new cut for that. So, although we premiered it last year at FrightFest, he's been tinkering with it to make it absolutely perfect.

AJ: That's something people do with FrightFest. They'll take a film away and amend it slightly, taking the audience reaction into account.

PM: What's also great about Wave Two is having a female director with Ruth Platt's *The Lesson*, which is a very strange, not purely horror, film. But it's a brilliant thriller with some very nasty stuff going on in it. Beautifully shot as well.

AJ: *Landmine Goes Click* is the one film we thought we were going to have a censor problem with. We were worried about that, although I won't tell you why. But we didn't and I was actually quite surprised.

Speaking about censors, you ran into trouble with *A Serbian Film* a few years back...

AJ: Yeah, we weren't allowed to have it [at the festival]. That's the only time it's ever happened. And it happened because a member of the public saw that we were showing it and said, 'Hang on a minute, I've heard about this film,' and got in touch with Westminster City Council. They freaked out and we had the filmmaker in town. So we had him, but we couldn't show the movie. The whole thing was ridiculous.

It's quite difficult. I write the programme for the festival. I have to make sure now that I don't hype films up too much, but hype it up enough for the audience. It's a difficult balancing act. I'd love to say, 'It's the most shocking thing you've ever seen!' and that sort of stuff, but if I do that it's like a red rag to a bull with Westminster City Council.

PM: I think there was one about five or six years ago where you put something like, 'Gore cannibal frenzy' and they asked to have a look at it. And we sent it to them and they were like, 'Is this it?'

AJ: The people who are supposedly making these stupid laws haven't seen a film for like a hundred years, it makes you sick. If we were just over the road, in Camden borough, we wouldn't have any problem. That 10 yards makes the difference about whether we can show something or not. It's ridiculous.

Do you see other possibilities for the FrightFest brand outside of the festival and label?

AJ: We have to keep it special. We love doing FrightFest Glasgow. The Scottish audience for us is fantastic. It comes at the right time, after a miserable winter. That gives it that nice sort of lift.

There's going to be a lot of different one-off days this year, because we've got a lot of interesting films coming that are released before FrightFest proper.

We're only three years away from FrightFest's 20th anniversary. Have you started making any plans for that?

PM: No! You know, that's the first time I've actually thought about it. But we are thinking about the

future constantly. So, for example, the very day after the last main FrightFest, we were already talking about titles and potential things for this coming year. We always look at least a year ahead. But probably not so far as three years.

AJ: Watch this space for an announcement that means that the next three years are going to be fine for us. That's coming up soon. But the 20th anniversary? I hadn't even thought about that.

FrightFest moved home from the Empire Leicester Square cinema to the Vue West End in 2014. How is that working out?

AJ: We can never go back to the Empire, it's never going to work.

PM: No, not as it was. But they would love us to go back there. And we would actually like, in some ways, to return.

AJ: The way they've reconfigured the screens just wouldn't work any more. And IMAX is another problem. IMAX do actually have a say in what goes in, and if you show a non-IMAX film you can't have all of the seats. There're all these rules and regulations.

PM: It is actually quite tough with Leicester Square, because it's changing so much. The Odeon West End has gone. The Empire's been split in half. The Vue is probably going to have refurbishments or whatever. And the other Odeon is just an enormous room. There's talk of other new theatres being brought in, but it's ever-changing.

I presume everything is provided as digital packages these days, and you don't screen genuine prints any more?

PM: It's all digital. Or we have to convert it from whatever format into the Digital Cinema Package.

AJ: The Vue, for example, that was part of the deal we made with them – everything had to be provided on digital. That can obviously be a problem. Whereas at the Prince Charles cinema, where we did our Halloween night, we could show a variety of formats.

Does the digital requirement pose any problems with screenings of older films?

AJ: For years I would avoid any retrospectives. I didn't want to show anything old. That's not what FrightFest was about. And then I realised that I was in a really good position where I'd got to see a lot of films on the bigscreen back in the day. I'm old enough for that. To deny that to an audience who hasn't seen those classics on the bigscreen...

PM: It's thrilling now. When we showed *Texas Chain Saw Massacre*, it was incredible.

AJ: And the Argento stuff. I'd seen everything because I worked with him. I tend to forget. Which is why I wanted to show *Your Vice is a Locked Room...* last year, I thought that needed to be seen on the bigscreen. And we got a great audience for that. I was surprised at how well they do. When we showed *Blood and Black Lace* in Glasgow it was packed.

It's got to be well chosen, but people should have the chance to see these films in the cinema ■

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Issue No.245



Issue No.246



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HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

TOP 10 TELEVISIONS

All prices are approx and may have changed

**Panasonic TX-65CZ952B** → £8,000

★★★★★

The price tag and curved panel will put some off, but this OLED debut from Panasonic delivers on its high-end promise. The startling performance mixes show-stopping black levels with masterful colour handling. *HCC #256*

**Samsung UE65JS9500** → £6,000 ★★★★★

Not cheap, but that's the only real downer about Samsung's range-topper. The super-bright 4K panel is ready for incoming HDR/UHD BD content; performance is excellent. *HCC #246*

**Panasonic TX-50CX802** → £1,500 ★★★★★

This 50-incher still packs Panasonic's premium processing and Smart skills. Performance is the best yet from the brand's LED stable, with excellent presets and backlight uniformity. *HCC #252*

**Sony KD-75X9405C** → £5,000 ★★★★★

This giant TV offers an irresistible blend of Ultra HD visuals and bassy, immersive audio made possible by the appealing Wedge design. Direct LED backlight provides nuanced contrast. *HCC #250*

**Panasonic TX-50CX700** → £900 ★★★★★

4K needn't be the preserve of those with big wallets seeking big displays. This 50-incher impresses with its Firefox-powered UI, vibrant colours and slender design. *HCC #252*

**Samsung UE55JS8500** → £2,300 ★★★★★

While shorn of some of the features of the JS9500 flagship (most notably the full-spec One Connect box), this step-down HDR set still packs a picture-quality punch. *HCC #251*

**LG 65EF950V** → £4,000 ★★★★★

An OLED TV with a flat rather than curved screen has instant home cinema appeal. Typically involving UHD performance, but not without some uniformity issues. *HCC #256*

**Philips 40PFT6510** → £480 ★★★★★

This Ambilight-toting, Android smart TV shows that regular Full HD imagery can still impress, helped by Philips' efficient processing and direct LED illumination. *HCC #253*

**Hisense LTDN50K321UWT** → £500 ★★★★★

No frills UHD TV? Not quite – this Hisense set offers Amazon and Netflix 4K clients in addition to its HDMI 2.0 spec and picture tweaks. Good, but not spectacular, imagery. *HCC #256*

**Loewe Connect 55** → £2,800 ★★★★★

Superb video processing and onboard PVR functionality are the highlights of this 55in 4K screen, but the lack of UHD streaming services, and a clunky interface, disappoint. *HCC #249*

TECH INFO: TELEVISIONS



What? No plasma?: The TV market is now dominated by LED-lit LCD screens. Manufacture and sale of plasma display panels (PDPs), which previously came into play above 42in, has ceased. With LED comes newer technologies. 4K models with a native resolution of 3,840 x 2,160 should at least be on your audition list if you're thinking of a new display; curved models are a consideration if you want to impress the neighbours. Look out for sets claiming support for HDR content, which is part of the forthcoming UHD Blu-ray spec.



Active or Passive: At the beginning of the 3D era, most TVs featured the Active system that uses relatively expensive, powered 3D specs to deliver full-res images to each eye. Passive 3D TVs, which are now more common, have a filter over the screen and use non-powered specs with polarising filters. The glasses are cheap as chips, but the resolution of Full HD 3D is halved to 540 lines horizontally (but remains at 1,920 vertically). The same halving occurs with a 4K screen. Some brands offer both Passive and Active models, depending on the panel used. Glasses-free 3D, heralded by Toshiba's early ZL2 TV, hasn't caught on. The tech is still being worked on, though.

TOP 5 BLU-RAY MOVIES

**Ant-Man 3D**

This micro-hero origin movie is a fun, quick-witted addition to the Marvel Cinematic Universe and is blessed with a 3D presentation that gets the most from the unusual imagery. No Atmos mix, but the DTS-HD track is fine.

★★★★★

**Jurassic World**

Grab some popcorn and watch this enjoyable, SFX-laden dino romp. The soundmix, while only a traditional DTS-HD 7.1 affair, packs a prehistoric punch and the bright, high-contrast 2.0:1 visuals look great.

★★★★★

**Inside Out**

More the Pixar of *Up* than *Cars*, *Inside Out* is an emotionally-charged 'toon that's sure to raise tears as well as smiles. Both 7.1 audio and Full HD picture are rock-solid. Get the Steelbook edition for the best extras.

★★★★★

**Mad Max: Fury Road**

It's back to the outback in this action epic that mixes a lean narrative with astonishing set-pieces. The disc's Dolby Atmos soundtrack is a delight, and image quality is pin-sharp. Instant reference status!

★★★★★

**Mission: Impossible – Rogue Nation**

The latest *MI* instalment continues the fine work of *Ghost Protocol* and enjoys an immersive Dolby Atmos mix and sweetly-sharp Full HD encode on Paramount's Blu-ray.

★★★★★

Top 10 BLU-RAY PLAYERS

All prices are approx and may have changed

- 1**  **Oppo BDP-103D → £600 ★★★★★**
 Oppo's first deck for two years was worth waiting for. The universal BDP-103EU featured a class-leading build and all manner of bonus goodies, including twin HDMI inputs. AV performance was faultless, and the onscreen menus superb. This newer model, the BDP-103D, adds Darbee Visual Presence processing for you to play with. *HCC #228*
- 2**  **Pioneer BDP-LX88 → £1,300 ★★★★★**
 The Japanese corp returns to the disc-playing high-end with a universal deck that weighs more than your AVR and drips with user tweaks and processing features. Stonking performer. *HCC #246*
- 3**  **Oppo BDP-105D → £1,100 ★★★★★**
 This heavyweight deck builds upon the premium picture performance of the BDP-103D with a wealth of audiophile upgrades – if you're serious about music, check it out. *HCC #234*
- 4**  **Arcam FMJ UDP411 → £1,200 ★★★★★**
 Pristine visuals – including upscaled SD – and a classy sonic performance grant this Arcam instant appeal. The design and build is commensurate with the premium price tag. *HCC #244*
- 5**  **Sony BDP-S7200 → £220 ★★★★★**
 A Sony deck without the curious angular design, the BDP-S7200 offers SACD support, hi-res audio streaming and 4K upscaling that's worth investigation. Not too pricey, either. *HCC #239*
- 6**  **Cambridge Audio CXU → £900 ★★★★★**
 Styled to match the brand's other CX components, this universal deck matches its audio and video chops with plenty of features, including Darbee and HDMI switching. *HCC #253*
- 7**  **Pioneer BDP-LX58 → £500 ★★★★★**
 Short on 'net content and a bit slow in use, but these are minor complaints – this model (which ranks below the BDP-LX88) is a gorgeous, thoroughbred Blu-ray performer. *HCC #250*
- 8**  **Panasonic DMP-BDT700 → £500 ★★★★★**
 Claiming THX-certified 4K upscaling and HDMI 2.0 60p passthrough, this mid-range deck from Panasonic is a good partner for a modern display. Great audio option, too. *HCC #237*
- 9**  **Samsung BD-J7500 → £170 ★★★★★**
 This well-priced spinner offers twin HDMI outputs and multichannel phono audio for flexible system hookup, an appealing design, Smart features and solid AV chops. *HCC #247*
- 10**  **Panasonic DMP-BDT370 → £100 ★★★★★**
 A solid deck at a great price, the DMP-BDT370 packs 4K scaling and JPEG playback into its full-width design. Let down by the dated Smart platform, although VOD options are good. *HCC #251*

TECH INFO: BLU-RAY PLAYERS

Matching your deck to your AV receiver: Blu-ray decks are designed to deliver top-notch images but Blu-ray is also about enjoying superior quality sound. When choosing a player, bear in mind the connectivity and decoding features of your AV receiver. If you're still using an older model that doesn't offer HDMI inputs, then you'll need a Blu-ray player with multichannel analogue audio outputs to enjoy decoded hi-res surround sound formats. Similarly, older but still HDMI-equipped receivers may not be able to cope with 3D video/4K output signals, in which case you'll need a deck with dual HDMI outputs – one channelling audio to your receiver amp, the other piping video direct to your TV.

What about the PlayStation?: Sony's console still represents an easy path to hi-def heaven. For a low-budget home cinema system, the £150 PS3 Super Slim makes a decent choice – especially if you like playing games. Control via a joypad is a pain, though, and the console runs more noisily than most BD spinners. The more expensive PS4 is a much better gaming machine, and now available in a 1TB version.



DEMO DELIGHT

Tomorrowland: The first flick released theatrically in the wide colour, HDR-toting Dolby Vision format, this bonkers sci-fi looks sumptuous on 1080p BD – colour saturation and detailing of the 2.20:1 encode is exemplary.

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Photo courtesy of UK Home Cinemas

TOP 10 PROJECTORS

All prices are approx
and may have changed**Sony VPL-VW520ES** → £8,800

★★★★★

The big daddy in Sony's domestic SXRD projector range, this couples native 4K optics with HDR compatibility for a state-of-the-art performance. Capable of jaw-dropping imagery and offers plenty of install flexibility. *HCC #254*

**Epson EH-LS10000** → £6,000 ★★★★★

Debuting a laser light source (30,000 hours) and Epson's 4K enhancement processing, this large chassis model is a cinematic triumph. Essential audition for a dedicated room. *HCC #247*

**JVC DLA-X500R** → £5,000 ★★★★★

Armed with a more adept third generation of the brand's proprietary e-shift technology, the X500R continues JVC's winning ways – contrast rich, sharp and full of tweaks. *HCC #232*

**Epson EH-TW7200** → £1,900 ★★★★★

Priced to appeal to those unable to dabble in the £3,000 market, Epson's mid-ranger is a great purchase. No frame interpolation on offer, but colours, contrast and brightness impress. *HCC #232*

**Optoma HD50** → £1,000 ★★★★★

With a retweaked user interface that improves upon previous Optoma light-cannons, the 12V-trigger-toting HD50 is a brilliant budget buy. *HCC #239*

**Optoma HD91+** → £3,500 ★★★★★

This LED/DLP Optoma claims a 20,000-hour lamp life. Setup features include a 1.9x zoom and image quality is generally excellent. Close in price to JVC's 4K eShift line, however. *HCC #252*

**BenQ W1070+** → £650 ★★★★★

An accomplished low-budget DLP model, the W1070+ offers ISF-certified calibration and a 12V trigger in conjunction with a sharp, bright, detailed performance. Bit of a bargain! *HCC #240*

**Optoma HD28DSE** → £700 ★★★★★

Affordable Full HD model armed with Darbee Visual Presence processing, which certainly helps give images a boost if you set it up well. Average black levels, though. *HCC #254*

**Epson EH-TW5300** → £580 ★★★★★

1,920 x 1,080 (and 3D-ready) LCD projector offers dynamic, crisp visuals but runs a bit noisily and doesn't come with 3D spex. Plenty of calibration tools, but no lens shift. *HCC #256*

**Acer H6520BD** → £550 ★★★★★

Offering a Full HD resolution and ready for 3D, this budget beamer is a decent no-frills option. No lens shift, and zoom is pegged at 1.1x. Images are bright and well-contrasted. *HCC #252*

TECH INFO: PROJECTORS



Installation: Although projectors can be temporarily placed on a cupboard, stand or shelf situated at the rear of the room (use the adjustable feet on its base to level the image so that it aligns with the screen), a much better long-term solution is to mount it on your ceiling with an appropriate bracket. Projectors can be quite heavy, though, so it's important to ensure that the bracket is attached firmly – ideally, it should be secured to a joist. Position your PJ so that an imaginary line from its lens to the opposite side of the room hits the screen exactly half-way along its width. The location of your screen should therefore dictate where your projector is. A decent tape-measure or laser pointer will help you to determine the position.

Throw distance: Throw distance specifies the distance between the projector and screen for a focused image of given size. As the vast majority of projectors are equipped with a zoom lens, minimum and maximum throw distances are often specified – say, 3.01m to 6.08m for a 100in. 16:9 image. Shorter throw distances are ideal for smaller rooms, and longer ones for larger rooms. Simple.

Throw ratio: Sometimes, a manufacturer will quote a throw ratio rather than a throw distance. This is basically the throw distance divided by the image width. To get the projected image size, divide the distance between projector and screen by the specified figure. Once again, the inclusion of a zoom lens means that upper and lower figures are usually specified.

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Top 10 SPEAKERS

All prices are approx
and may have changed**Monitor Audio Gold 300AV** → £7,150

MA revamps its Gold Series and we pay serious attention. This big-ticket package excels across the frequency range, offers exquisite design and packs setup flexibility via the dipole/monopole FX surrounds. *HCC #251*

**Q Acoustics 3000 5.1 Cinema Pack** → £700 ★★★★★

A superior compact package with driver improvements over the previous 2000i series. The two-way cabinets and dual-driver sub combine to offer impressive audio for the money. *HCC #247*

**B&W 683 Theatre 5.1** → £2,750 ★★★★★

The first step on the floorstanding ladder in B&W's speaker stable, the 600 Series incorporates new tweeter and bass driver designs and offers absurd value for money. *HCC #234*

**KEF R Series 7.1** → £6,500 ★★★★★

A 7.1 array mixing dipolar and direct surrounds, this authoritative package takes its cues from KEF's Blade concept speaker and offers faultless, largescale home cinema sonics. *HCC #217*

**Artcoustic Spitfire SL 7.2** → £17,000 ★★★★★

Slimmed-down cabinets now even easier to install on-wall or behind a screen, with a multi-driver design ensuring they're easy to drive to high SPLs. Ideal for dedicated rooms. *HCC #233*

**Wharfedale Diamond 220 HCP** → £850 ★★★★★

This package offers a lot for less than a grand – two-way surrounds, a potent three-driver centre channel and agile subwoofer. Great movie sound and excellent build. *HCC #248*

**Monitor Audio Bronze B5 AV** → £1,500 ★★★★★

Like their Gold siblings, these feature switchable surround speakers and MA's C-CAM drivers. Smaller in stature and output, but eminently more affordable. *HCC #254*

**SVS Prime Satellite 5.1** → £1,000 ★★★★★

These satellites are the smallest speakers from the US marque – but still sizable enough to deliver an impressive full-range performance. Quality subwoofer, too. *HCC #249*

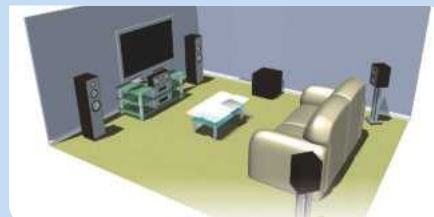
**Tannoy HTS-101XP** → £700 ★★★★★

A great sub/sat option. Tannoy's coaxial drivers excel at treble details; the new dual-driver subwoofer delivers the bottom end with gusto. Decent styling, too. *HCC #252*

**JBL Arena 5.1** → £850 ★★★★★

With horn-loaded tweeters derived from JBL's costlier packages, this floorstanding set doesn't skimp on impactful, dynamic thrills. Subwoofer is pretty basic. Solid sub-£1,000 array. *HCC #256*

TECH INFO: SPEAKERS



Centre speaker: Handles most of the dialogue and onscreen effects. Should be positioned above or below the screen as close to it as possible. Of course, if you're using a projector screen, it should ideally be placed behind it.

Front speakers: Left and right speakers should be positioned either side of the screen, in line with the centre. Turn the speakers in slightly to face the listener if there isn't an even movement of sound across the front of the room.

Subwoofer: Can be positioned wherever it sounds best or can be tucked out of sight due to the non-directional nature of low-frequency signals. Be aware that close positioning in corners or next to walls can create a boomy effect.

Surrounds: Position alongside the listener, pointing in or slightly behind the ears for a good surround effect. The back wall is not a good position for surrounds – it is, in fact, where you should locate the sixth and seventh speakers (rears) in a traditional 7.1 array.

DEMO DELIGHT

Mad Max: Fury Road: This outback actioner comes complete with an inventive, detail-packed Dolby Atmos soundtrack that has to be heard to be believed. Music and atmospheric effects are regularly shunted into the height channels, the subwoofer puts in a serious shift, and object placement is remarkable. Play it loud!



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TOP 10 AV RECEIVERS/AV PROCESSORS

All prices are approx
and may have changed**Onkyo TX-NR3030** → £2,500

★★★★★

The current king of Atmos AVR, this 11-channel design enables four height speakers to be added to an existing 7.1 array with ease. Lithe on its feet and with exemplary steering, this is multichannel audio at its best. *HCC #245*

**Marantz AV8802A** → £3,350 ★★★★★

This 11.2-channel next-gen processor (Atmos, DTS-X and Auro-3D) is an obvious upgrade for a high-performance separates system. Luxuriant, natural sound quality. *HCC #253*

**Denon AVR-X7200WA** → £2,500 ★★★★★

Capable of being upgraded to DTS:X, and sporting HDCP 2.2 support, this Atmos AVR is as futureproofed as it gets. Only a nine-channel design, though. *HCC #248*

**Denon AVR-X5200W** → £1,700 ★★★★★

Offering Atmos – and Auro-3D via a paid upgrade – the Denon X5200W offers nine amp channels and 11.2 processing. Energetic sound and flexible setup. *HCC #243*

**Pioneer SC-LX89** → £2,100 ★★★★★

Controlled but lively-sounding 9.2-channel AVR (Atmos, DTS:X) that's packed with tweaks. MCACC calibration impresses, but the overall complexity here could be a turn off. *HCC #256*

**Marantz NR1606** → £600 ★★★★★

A slim receiver with a power output suited to smaller speakers/rooms (7 x 50W), this Marantz still offers Atmos/DTS:X, 4K support and hi-res audio playback. Lively performer. *HCC #254*

**Yamaha RX-A550** → £550 ★★★★★

Only a 5.1-channel model – and subsequently not endowed with Atmos/DTS:X chops – the RX-A550 impresses with its audio performance, design and networking features. *HCC #252*

**Cambridge Audio CXR120** → £1,500 ★★★★★

This Brit-designed 7.2-channel receiver focuses on performance and ignores object-based audio and built-in Bluetooth. Sound quality is assured and construction is monstrous. *HCC #251*

**Onkyo TX-RZ800** → £1,050 ★★★★★

Feature-packed (DTS:X, HDCP 2.2) and sporting a new, clean design, Onkyo's mid-priced nine-channel AVR is easy to use and sounds sprightly, if a little short on aggression. *HCC #253*

**Pioneer VSX-930** → £500 ★★★★★

Operation could be smoother, but there's no doubting this bargain-priced 7.2-channel AVR (with Dolby Atmos) when it comes to precise multichannel delivery. *HCC #249*

TECH INFO: AV RECEIVERS



Tackling new heights: A recent innovation in AVR circles is the introduction of Dolby Atmos, the object-based sound format that has taken off in commercial cinemas and is supported in the home by the likes of Onkyo, Pioneer, Denon, Marantz and Yamaha. This requires new height speakers in addition to a regular 'flat' 5.1 or 7.1 speaker configuration. The heights can either be physically mounted in/on your ceiling, or provided via up-firing reflective models. Setup can be complex, but the results are certainly impressive. Atmos-encoded Blu-rays are a bit thin on the ground, but you can use Dolby Surround post-processing with regular 5.1/7.1 soundtracks to get the most from your new AVR/speakers. Rivals to Atmos are Auro-3D, which uses height speakers in a different configuration, and the forthcoming DTS:X. Most AVR brands have already pledged support for the latter.

How much power?: Many of the mass-market AV receiver manufacturers are involved in a specifications race to see who can say their model is the most powerful, which can be confusing for consumers. For instance, both Krell's £7,000 S-1500 seven-channel power amp and Yamaha's £500 RX-V675 both claim 7 x 150W – the important part is that Krell's figure is into an eight-ohm load with all channels driven, and that Yamaha's is with one channel into a four-ohm load, which is hardly a real-world situation. The best advice is ignore the numbers game and get a demo of your desired AVR with the same, or similar, speakers that you intend to partner it with.

TOP 5 BONUS FEATURES

**Kingsman: The Secret Service Revealed**

A lengthy (92-minute) doc that is a must-watch for fans of the kinetic British comic book adaption, this looks back at the movie's origins and delves deep into its production.

★★★★★

**The Science of Interstellar**

From black holes to the search for planets that can support life, this engrossing 50-minute doc (narrated by Matthew McConaughey) explores the scientific rationale that lies at the heart of the recent sci-fi epic.

★★★★★

**Keepers of The Covenant: The Making of Exodus**

Another great *Making of...* doc supporting a Ridley Scott flick, this 153-minute, seven-part feature covers everything you could possibly want to know about the film's production.

★★★★★

**Eaten Alive**

Lurking in the extra features on 88 Films' Blu-ray release of *Zombi Holocaust* is this fascinating 85-minute documentary exploring Italian cinema's love affair with cannibal horror flicks.

★★★★★

**Talking Fast**

This 30-min interactive feature on the *Fast & Furious 7: Extended Edition* Blu-ray works well in place of a regular commentary. Motor-mouth director James Wan is a great host as he discusses key production aspects.

★★★★★

Top 10 SUBWOOFERS

All prices are approx & may have changed

- 1  **SVS SB-2000** → £650 ★★★★★
This follow up to the SB-1000, which incorporates a new 12in driver and revamped Sledge DSP amplifier, offers immense value for money. A mid-sized woofer that imbibes your Blu-rays with potent LFE, the SB-2000 sounds quick and taut, and is a perfect introduction to what a truly good sub can accomplish. HCC #233
- 2  **REL 212SE** → £2,750 ★★★★★
Lush design joins engineering nous in this premium sub with two active 12in drivers supported by a pair of passive radiators. Loud, deep and impactful, your BDs are in safe hands. HCC #246
- 3  **JL Audio Fathom F212** → £5,900 ★★★★★
The US brand arrives in the UK in style – this 2 x 12in, 3,000W brute not only looks gorgeous, it's capable of a mindblowing performance. Got a big room? Get one of these! HCC #214
- 4  **REL S-5** → £1,600 ★★★★★
A step up from REL's affordable T series, this 12in model is large and weighty, with a performance level to match. Fast and tight but capable of dropping very low indeed. HCC #234
- 5  **Bowers & Wilkins PVID** → £1,200 ★★★★★
One of the coolest-looking subs on the planet, B&W's PVID uses DSP trickery to craft an opulent low-end performance. The touch-sensitive OLED display is pure class. HCC #212
- 6  **Eclipse TD520SW** → £3,000 ★★★★★
This twin 8in woofer, driven by ICEpower amplification, aims for ultimate speed and tone – and succeeds. Simply put, the TD520SW is worth every penny of its asking price. HCC #249
- 7  **BK Electronics P12-300SB-DF** → £475 ★★★★★
Bass heads can get outrageous value for money in the shape of BK's overperforming 12in sub. A front-firing model is also offered, and other finishes knock the ticket down to sub-£400. HCC #247
- 8  **JL Audio E-Sub e112** → £2,050 ★★★★★
This 12in, 1,500W model from JL Audio's 'entry-level' line seems pricey, but its performance, design and tuning options make the investment oh-so worthwhile. HCC #240
- 9  **SVS PB-2000** → £750 ★★★★★
The ported sibling to the SB-2000, this woofer uses the same driver and amp arrangement, but in a far larger cabinet. Bass goes deeper, but not at the expense of finesse. HCC #243
- 10  **Artison Nano 1** → £800 ★★★★★
Artison's media room-friendly woofer tucks twin 6.5in bass drivers and a 300W amp into its compact frame. Bass extension isn't the deepest, but this is tight, fast and heaps of fun. HCC #253

TECH INFO



Why use more than one sub?: Using two subwoofers (or perhaps four) should, in theory, bring huge rewards in terms of bass performance. But remember that LFE is a tricky beast to control. Running two subs may simply double problems in your room like room boom and suck-outs, where outgoing and reflected bass sounds cancel each other out. If you have some flexibility in where you place subwoofers, trial and error may well throw up some interesting results. The acoustics wizard Floyd E Toole (his book *Sound Reproduction: The Acoustics and Psychoacoustics of Loudspeakers and Rooms* is fine bedtime reading) suggests one LFE sub to either side of the room may be best for accuracy while placing them in the front corners would be best for overall bass power. Yet there is no hard and fast rule as to what will work best for every room, and you may find that simply using one (large) subwoofer is preferable as it's the easiest to get sounding right.

DEMO DELIGHT

San Andreas: This brilliantly over-the-top SFX-heavy disaster flick magicks up a scenario where both downtown Los Angeles and San Francisco (not to mention the Hoover Dam) are hit by mega earthquakes, and its Atmos mix is subsequently loaded with LFE. Buildings topple and pavements tear apart with real fear-inducing weight, keeping your sub on its toes for much of the 110-minute running time.

Top 5 CONSOLE GAMES



Just Cause 3
More open-world japes from Avalanche Studios following the exploits of secret agent Rico Rodriguez. *Just Cause 3* is heaps of fun – playful and silly rather than serious – and scrubs up well on next-gen consoles. ★★★★★



Mortal Kombat X
The king of beat-'em ups, NetherRealm Studios' newest entry into the popular franchise is strewn with gore, plays well and even lets you fight as the Predator if you fork out for the DLC upgrade... ★★★★★



Batman Arkham Knight
The concluding part of Rocksteady's Batman trilogy gives players an immense world to explore – everything here is bigger and better than before – and the moody, cinematic visuals are a treat for your display. ★★★★★



Metal Gear Solid V: The Phantom Pain
Our pick for 'Game of the Year' in 2015, this open-world stealth/actioner dazzles with its breadth, interaction, flexibility and lush visuals. A fitting end to the legendary series. ★★★★★



Transformers: Devastation
Forget the Michael Bay movie series, this action-packed *Transformers* game harks back to the 1980s 'toon series. As such, it looks lush, with its cel-shaded style igniting childhood memories. And it plays great too. ★★★★★

TOP 10 ACCESSORIES

All prices are approx and may have changed

- 1 KEF R50 → £600 ★★★★★**
 KEF's Dolby Atmos-enabled reflective modules are a smart choice for anyone looking to beef up their speaker system. Using the company's Uni-Q point source drivers pays real dividends, enabling full-range sonics that reach deep into your cinema room. Styling and build quality are first rate. £600 gets you a pair – you'll soon want four... *HCC #252*
- 2 Amazon Fire TV 4K → £80 ★★★★★**
 Amazon reboots its media player to include 4K video prowess, greater storage capability and a souped-up engine. The result is an intuitive add-on that's ideal for 4K TV owners. *HCC #254*
- 3 Devolo dLAN 650 Triple+ starter pack → £120 ★★★★★**
 This package makes Powerline networking fast (claimed at up to 600Mbps) and easy. The three-port Ethernet extender is sleekly designed, and provides a regular plug socket, too. *HCC #239*
- 4 Samsung WAM7500 → £500 ★★★★★**
 Also known as the R7, this addition to Samsung's multiroom system delivers authentic omnidirectional sonics via its super-stylish oval-shaped enclosure. Expensive, but excellent. *HCC #253*
- 5 KEF Muo → £300 ★★★★★**
 Portable Bluetooth speaker that's a cut above. KEF's sonic knowhow results in a punchy, dynamic presentation that cherishes lossless rips. Excellent build quality. *HCC #256*
- 6 QNAP HS-251 → £300 ★★★★★**
 Adding HDMI connectivity to a NAS device is surprisingly useful – and this slim-line model from QNAP is styled to grace your living room. Flawless media playback and responsive. *HCC #248*
- 7 Now TV → £15 ★★★★★**
 Among the new tricks of this second iteration of Sky's compact streamer are 1080p output, microSD and USB inputs and a faster processor. And it's still ridiculously affordable. *HCC #253*
- 8 Pioneer XDP-100R → £500 ★★★★★**
 Android-based hi-res audio/video player that's ready for MQA files and sounds smooth and detailed. The 720 x 1,280 screen (4.7in) is up to the job with VOD apps and games. *HCC #256*
- 9 Sony SRS-X11 → £60 ★★★★★**
 An affordable palm-sized Bluetooth speaker with internal rechargeable battery, Sony's SRS-X11 is supremely portable and sounds decent for the money. A neat little gizmo. *HCC #249*
- 10 Logitech Harmony Elite → £270 ★★★★★**
 Flexible and relatively easy to set up, this all-in-one remote package combines touchscreen handset and hub with smart device app. Worthwhile if you have a stacked kit rack. *HCC #256*

TECH INFO: MEDIA PLAYERS



What about my TV?: Most flatscreen TVs from the major brands (Sony, Samsung, Panasonic, LG, Toshiba and Sharp) also incorporate media player functionality, using Ethernet or Wi-Fi to stream from your home network, or from plugged-in USB drives. Most modern Blu-ray players offer this, too. However, file support is rarely as extensive as on dedicated devices from the likes of Western Digital and A.C. Ryan, and our experience shows some are more adept at playback from USB than over a network. Nor (obviously) is a TV or BD player portable. If your media collection extends beyond JPEGs and MP3s into lossless audio rips and esoteric HD video formats, then a standalone player is a good investment.

Storage: You can, if you really want, store all your files on a plethora of USB drives, or on your PC, but it's best to get a NAS (Network Attached Storage) device for simplified sharing of your media across a network with

multiple players, such as one from Netgear's ReadyNAS range (pictured). These dedicated devices often offer RAID array file backup, and are managed via browser software. Storage capacity can be anything from 1TB to 12TB and beyond.



TOP 5 BLU-RAY/DVD BOX SETS

**Hellraiser: The Scarlet Box**

This set ignores the inferior DTV sequels to collect the first three movies in the Clive Barker horror franchise, and offers beautiful restorations plus plenty of in-depth bonus material. Limited to 5,000 copies – be quick!

★★★★★

**Agent Carter: The Complete First Season**

This eight-episode series was the best thing to come out of Marvel in 2015, with Hayley Atwell excelling as the titular agent fighting for the truth in post-War US. Solid AV, no extras.

★★★★★

**The Long Good Friday + Mona Lisa**

Two of Bob Hoskins' most iconic roles presented in an extras-packed boxset and given thoroughly impressive HD transfers – both look wonderfully filmic.

★★★★★

**Kinji Fukasaku's Battles Without Honour and Humanity: Complete Col.**

The image and sound quality of these five 1970s yakuza flicks may struggle to dazzle, but this is a great boxset for Fukasaku's sprawling Japanese crime saga.

★★★★★

**Better Call Saul: Season One**

This spin-off from the award-winning *Breaking Bad* stands up well on its own, and this extras-packed BD release features superb 1080p visuals and DTS-HD 5.1 mixes.

★★★★★

Top 10 SOUNDBARS & SOUNDBASES

All prices are approx
& may have changed**Yamaha YSP5600SW**

→£1,900 ★★★★★

With its 46 drivers (including upfiring) this premium 'bar' delivers precisely-steered and immersive audio, even of the Atmos variety. Potent wireless sub and 4K-capable HDMI switching sweeten the high-end deal. *HCC #254*

**Canton DM100** →£530 ★★★★★

An assured 2.1 performance delivered by an eight-strong array of separate tweeters, mid-range and bass drivers in a 1m enclosure. Suited to the large screens of today's 4K world. *HCC #253*

**Sony HT-XT3** →£450 ★★★★★

A great-sounding soundbase blessed with HDMI connectivity, HDCP 2.2, Wi-Fi, Bluetooth, multiroom support, screen mirroring and app control. There's little to complain about. *HCC #250*

**Yamaha YSP-2500** →£800 ★★★★★

An HDMI-switching 'sound projector' using Yamaha's Beam tech to craft impressive surround sonics from its drivers. Efficient sub, plenty of detailing and fun/useful app control. *HCC #243*

**Cambridge Audio TV5** →£300 ★★★★★

Twin 6.5in bass drivers lend the TV5's sound some decent low-end heft, but not to the detriment of the rest of the soundstage. An enjoyable, balanced listen. Easy to use. *HCC #245*

**Q Acoustics Media 4** →£330 ★★★★★

A no-nonsense offering from the speaker specialist, which ignores HDMI inputs and daft DSP modes in favour of creating a nuanced, solid 2.1 soundscape. *HCC #238*

**Monitor Audio ASB-2** →£700 ★★★★★

This premium proposition marries Monitor Audio's C-CAM drivers with AirPlay and DLNA music streaming. Performance is exemplary – powerful and polished in equal measure. *HCC #229*

**DALI Kubik One** →£800 ★★★★★

The Danish speaker brand brings a slice of glamour to your setup with this stylish soundbar. No HDMI or digital decoding but it packs a tight, lively and nuanced sound. *HCC #248*

**Philips Fidelio B5** →£600 ★★★★★

Detachable battery-powered side speakers let you enjoy both genuine surround sound and straight 2.1 (there's a wireless sub). And each speaker offers Bluetooth hookup. Innovative. *HCC #249*

**Orbitsound A70** →£500 ★★★★★

Not overly specified – there's no HDMI, for instance – but this elegant 'bar/sub combi just about justifies its price tag with an enveloping and very well-balanced performance. *HCC #251*

TECH INFO: TV PLATFORMS

**TV addicts – go free, or pay-to-view?:**

The analogue switch-off has created a competitive market in free-to-air platforms, while Sky and Virgin Media are squaring up to the likes of EE TV, Amazon Prime and Netflix. Deciding which service is right for you can be complex, and you may find your needs are best catered for by a combination.

Sky+HD: The long-running satcaster offers a plethora of HD channels, with content including recent movie releases, live sports and sought-after US shows. Hardware options include the 2TB dual-tuner PVR. An upgrade, dubbed Sky Q, is arriving soon, and will offer 4K support among its tricks.

Virgin Media TiVo: The cable giant offers a three-tuner PVR (1TB) with intelligent TiVo recording tricks, catch-up apps (including Netflix and Spotify), and over 240 channels (depending on package). Premium Sky content can be added on a monthly basis.

Freeview: Common option when it comes to TVs and STBs. Freeview offers 13 HD channels plus SD and radio. Freeview Play adds IPTV integration to the EPG – and you'll find it on some Panasonic TVs.

Freesat: Satellite service offering a similar – but not identical – channel lineup to Freeview, delivered via a dish but without a subs cost. Budget-priced STBs are available.

YouView: This relatively new kid on the block integrates the UK's main catchup portals directly into a backwards EPG. Again, channels are broadly similar to Freeview and there's no contract. Humax (PVRs) and Sony (TVs) are leading the hardware charge.

Top 5 BACK-CATALOGUE BLU-RAYS

**Charlie Chaplin: The Mutual Comedies**

Exquisite restorations of the 12 shorts that the little master made for the Mutual Film Corporation in 1916/17. And this two-disc BD comes with some worthwhile bonus bits.

★★★★★

**Blood and Black Lace**

Mario Bava's genre-defining 1964 slasher makes its hi-def debut with a dazzling new 2K restoration that really gets the best out of the film's bold colour palette, alongside an exhaustive array of supplementary features.

★★★★★

**Goodfellas: 25th Anniversary Edition**

As far back as we can remember we always wanted a new 4K restoration of this Martin Scorsese gangster classic. And now we have one, with some new extra features, too.

★★★★★

**The Third Man**

StudioCanal takes a second stab at releasing this celebrated 1949 Brit-noir starring Orson Welles, rewarding buyers with an excellent image taken from a 4K restoration plus some new documentary material.

★★★★★

**Thieves' Highway**

This gripping, revenge-filled 1949 film noir from Jules 'Riffifi' Dassin is given deluxe treatment by the Arrow Academy label, with the black-and-white picture looking excellent courtesy of a 4K restoration.

★★★★★

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TOP 5 PVRs

**Virgin Media TiVo, £subscription**

This triple-tuner PVR offers ultimate recording flexibility, useful features – you can undelete deleted shows! – and awesome TiVo functionality. A no brainer if you're in a cable area

★★★★★

**Sky+HD, £subscription**

Sky's channel choice is second-to-none and its twin tuner 2TB PVR is a perfect partner. The recent EPG tweak is welcome and Anytime (the push VOD service) is brilliant for catching up on new movies

★★★★★

**Humax HDR-1100S, £190**

Freesat Freetime PVR that impresses with its usability, VOD options and form factor – Humax's small, white box will slot into any kit rack. We tested the 500GB version – 1TB and 2TB models are also available

★★★★★

**Humax DTR-T4000, £subscription**

This YouView-based PVR is required to get BT Sport's new Ultra HD channel – available to those with BT fast fibre and a BT TV sub. Easy to use and with 1TB of storage

★★★★★

**EE TV Smart Box £subscription**

This quad-tuner 1TB PVR, from the mobile/broadband corp, offers innovative Replay 24-hour channel recording and great Smart device streaming. Needs more catch-up though

★★★★★

TOP 5 HEADPHONES

**Sony MDR-HW700DS, £800**

Comfy cans supplied with an HDMI surround processor, enabling multichannel audio to be fed to a virtual 9.1-channel soundstage. The effect is superb – great for late-night listening

★★★★★

**Oppo PM-1, £1,100**

Audiophile-grade, using planar magnetic driver designs, and with a lush design and build. The sound quality of the PM-1s is superb, so while these are undoubtedly costly, buyers won't be disappointed

★★★★★

**Lindy Croma NCX-100, £100**

A cost-effective domestic option and great for travelling, these noise-cancelling 'phones (which can also be used as a normal passive design) feature a pleasant, balanced sound

★★★★★

**PSB M4U1, £220**

Aimed at both home and on-the-move use (and supplied with a carry case and two cable options), the M4U1s offer solid bass response and impactful highs. Build quality is good, as is comfort

★★★★★

**Beyerdynamic T70, £330**

Closed-back cans with excellent weight distribution for a comfy fit and a sound that doesn't put a foot wrong. These motor through movie soundtracks with vigour, clarity and a solid low-end

★★★★★

TOP 5 SYSTEMS

**Panasonic SC-BTT505, £600**

Two-way driver arrangements in these grown-up looking speakers (plus a dizzying range of features) make this a great purchase. Big, dynamic sound, with strong dialogue

★★★★★

**Samsung HT-J7750W, £800**

Samsung's top-dog in its 2015 lineup is similarly styled and specc'd to last year's H series model. It has a powerful, dynamic sound, but is a little rough around the edges

★★★★★

**Harman/Kardon BDS470, £650**

Harman's 2.1 system eschews 'net TV and streaming features, but majors in heavyweight build quality and solid AV performance. We tested a 2.1 iteration – 5.1 is also available

★★★★★

**LG BH8220B, £650**

With its silver finish, this is a suitable one-box system to partner with LG's flatscreen TVs, with a commendable, if slightly lacking in HF finesse, sound. Additional features including CD-ripping to USB. Handy

★★★★★

**Onkyo HT-S7705, £650**

This Atmos-capable AV receiver and speaker package is an ideal entry-level setup for a forward-looking system. Loaded with features (including Wi-Fi and Bluetooth). Just add a BD deck and you're sorted

★★★★★

HOME CINEMA

Choice

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MEANWHILE...



AV AVENGER

Although Virtual Reality presents intriguing possibilities, **Steve May** is certain that there's no place for a face-hugging headset in his home cinema lifestyle

VIRTUAL REALITY MAKES me sick. No, it really does. I've donned VR goggles more than once, and more than once I've ended up looking for a brown bag afterward. There's something about the disorientating sense of motion and the sensory deprivation of VR that snafus my equilibrium. I reckon I'm not alone in this. Yet this hasn't prevented VR being hailed as The Next Big Thing.

Indeed, the Consumer Technology Association (CTA) predicts VR headset sales in 2016 will create a market worth \$540 million. If you've been waiting for the next 3D fad, here it comes.

And VR has a lot of similarities with 3D. It's cyclical for one thing. I first experienced VR back in the 1980s. Back then, headsets immersed you into a crude polygon world where virtual hands floated in front of your face. The games industry then became excited – Mattel made the Power Glove controller for the NES, while Sega touted a VR headset for the Mega Drive – but ultimately no one cared.

When 3D made its last big push, exponents like James Cameron blustered how wearing 3D glasses would be the new normal. Even the daily news would be broadcast in 3D, we were told. Today's VR evangelists are promising similar ubiquity. Samsung suggests we'll be wearing Gear VR goggles when we dine out, so our meal appears to be served underwater, or in the Coliseum circa 70AD. There are VR apps to watch Vimeo and Twitch, because just watching Vimeo or Twitch is no longer enough.

Netflix has even developed a VR app, so that we can watch a Netflix screen in a virtual room, in our actual room.

Or on the moon. This is obviously all idiotic.

This isn't to say I'm not keen to see how VR pans out. I just think it's got zero mass-market appeal. The fact is no one likes to wear glasses, unless

they actually need them to see – and even then, not so much.

But novelty value alone will ensure early sales. Heck, I'll probably pre-order goggles. I'm a sucker for any video games hardware, so PlayStation VR is inevitable. Also inevitably, they'll end up gathering dust alongside my PlayStation Camera, Wii U and 3D glasses.

While it's easy to predict that VR is destined for a gaming niche, it's intriguing to wonder what other creatives will do with the VR toolbox, given the all-too-real loot currently being thrown their way. As mentioned in my CES show report, TV broadcasters are keen to join in. According to a joint report from the CTA and the National Association of Television Program Executives (NATPE), the technology 'is likely a game-changer.' Speculating where it could go beyond gaming, they identify horror as the next strongest genre. It's easy to imagine a VR extension of *The Walking Dead*, but it could well be just too damn scary to play.

Is music a more likely VR bedfellow? Metal band Megadeth has done a live 360-degree VR shoot to support its *Dystopia* album. You can get on stage with the band and run virtual fingers through Dave Mustaine's locks. One Direction are probably planning something similar. Smartphone makers will bludgeon each other senseless to own this.

Ultimately, though, I suspect VR is more theme park than home entertainment. Will we all be watching a *Star Wars* VR remix in 2020? Frankly, I'm more likely to learn Wookiee. Call me old-school, but I think claustrophobic eyeware will never rival the experience of a big Ultra HD screen and surround audio. Or a good book ■

Are you eager to add Virtual Reality to your AV setup? Let us know: email letters@homecinemachoice.com

Steve May's love affair with VR peaked with the 1990s BBC2 gameshow *Cyberzone* – he still shouts 'Awooga' when he stubs his toe





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